MECCANO® Magazine

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QUARTERLY

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DIAMONDS ARE FOREVER

IN THE January MMQ I reported that this year marked the Diamond Anniversary of the invention of the 'Meccano idea' – 75 years since it was first patented. According to the large and weighty dictionary we keep in the office, however, the term 'Diamond Anniversary' can be applied, not only after 75 years, but also after 60 years. As several readers have pointed out, therefore, this year also marks the Diamond Anniversary of the Meccano Magazine – we're 60 years old!

The very first issue of the Magazine appeared in September 1916 and covered September and October, being published bi-monthly in those days. It was far removed from the Magazine of later years – or even of today – being only a 4-page, 1-fold broadsheet, 13¼" x 10" in size, printed on rather poor quality paper. On the first page it carried a message from Frank Hornby, illustrations of a Crane, a Loom and a new Meccano Manual, and the Editor's first Editorial.

The two inside pages, in addition to describing some Meccano equipment, were mainly devoted to illustrations of prize-winning models entered in a previously-held competition and to an announcement of a new competition. The fourth and last page illustrated a Meccanograph, with three sample patterns, had a column of letter-extracts, a column listing the outfits then available and another column titled "The Premier Toy" – a rather blatant piece of self-praise, I thought!

The content improved rapidly, but the 4-page broadsheet remained the same size and format for some four years, then the September-October 1920 edition appeared with eight pages, to the smaller more magazine-type size of 11" x 8¾". In my opinion, the M.M. was now really getting under way, although it was still published bi-monthly. The September 1922 edition, however, saw the first monthly Magazine – with twelve pages – and thereafter the M.M. remained monthly until the launch of the MMQ in 1973.

Over the years the number of pages per issue increased enormously, but the page size stayed more or less the same until paper restrictions during the Second World War caused a dramatic cut in area to a "pocket book" size of 8" x 5½".

FRONT COVER

In the early days, as with the MMQ, the front page was used for editorial matter, even when a second colour – red – was added in July 1923. In December that year, however, a full-colour cover was introduced, with a full-cover illustration, and this remained the norm, again until the start of the MMQ.

The small size introduced during the War remained for many years after the War, but, in January 1921, the page area was at last increased to 9½" x 7½". Then, in January 1964, after the Magazine had been "farmed out" to an independent publisher, the format reverted to the pre-war size of 11" x 8¼". Some 3½ years later, however, following the July 1967 edition, the first-ever break in publication occurred when the independent publisher suddenly gave up the Magazine. Meccano immediately appointed a new publisher, Model and Allied Publications Limited, but it was January 1968 before M.A.P. were able to launch their first issue – with their standard, but somewhat smaller size of 9¾" x 7¼". Thereafter, many of today's readers will know the story: M.A.P. discontinued the Magazine with the December 1972 issue and Meccano stepped in to again take over direct publication. However, because of time pressures, other commitments and the equipment at our disposal, we were not able to publish the Magazine every month and so the Meccano Magazine Quarterly was launched in April 1973.

It is clear from all this that the Magazine has been through many changes in the past, and no doubt the future will see more changes. But, with our Diamond Anniversary, we've clocked up a notable milestone and I'm sure there will be many more to come.

The Editor

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PUBLISHED FOUR TIMES PER YEAR IN JANUARY, APRIL, JULY AND OCTOBER

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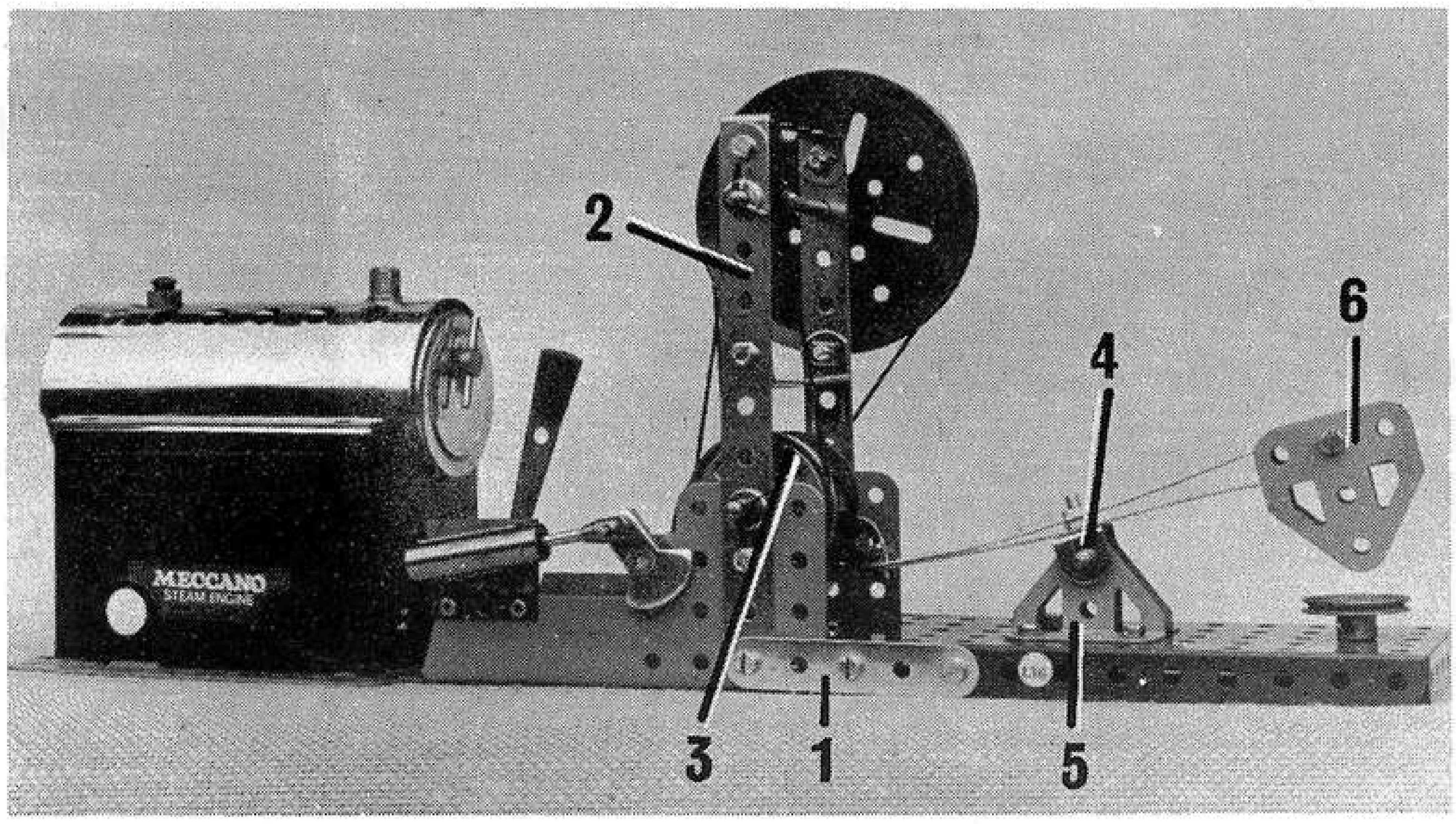

More hints, ideas and news from readers for our readers

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AMONG THE MODEL-BUILDERS

with "Spanner"

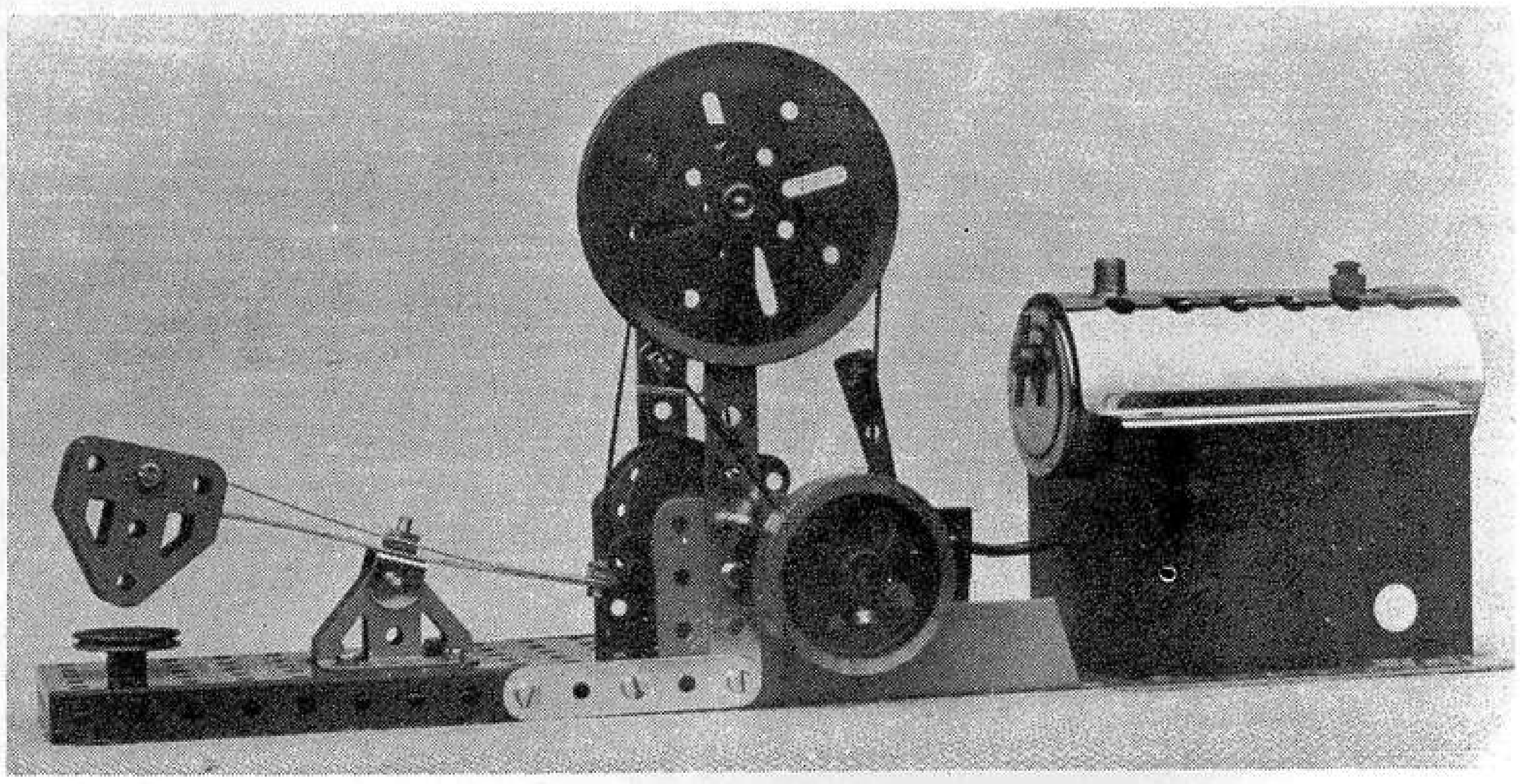
ONE MECCANO Power Unit which we do not seem to feature often in these pages is the Meccano Steam Engine. In fact, I don't think we have included a current Steam Engine-powered model at all in the MMQ! We have published a "Past Master" Model which, although it could be fitted with the current Steam Engine, was originally designed for the obsolete pre-war Power Unit, but we have not actually featured a modern live-steam model since the days of the old monthly MM. To now rectify the situation, therefore, I would like to devote some of my space to the Steam Trip Hammer illustrated here. Though simple, it is a pleasing little model designed and built by Mr. Basil Harley of Little Barrington, Burford, Oxfordshire.

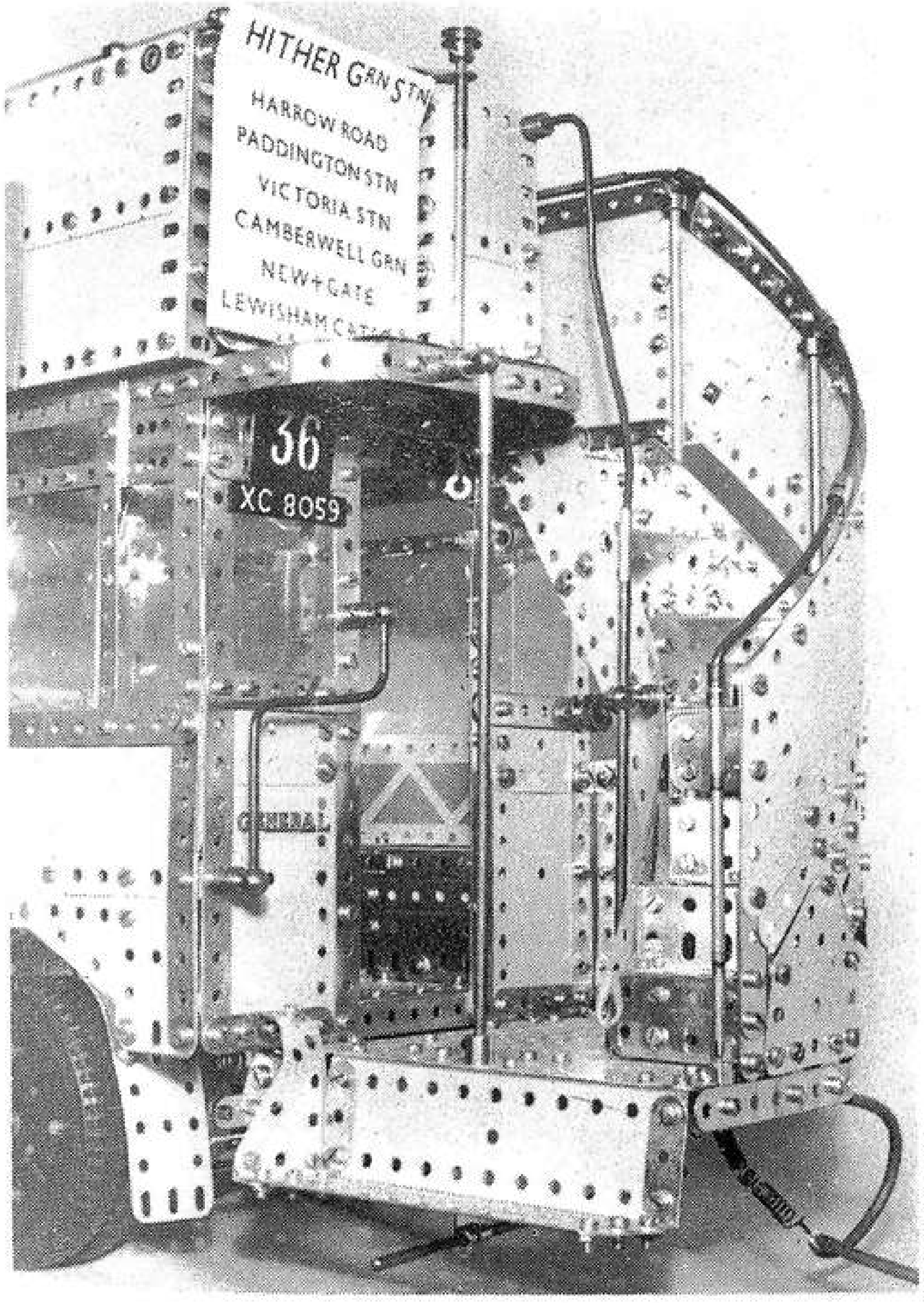
In designing the model, Mr. Harley had three aims in view: (a) the model had to be something traditionally driven by steam, (b) it had to be capable of continuous running for exhibition work, and (c) it had to be inexpensive. "I bought a No.1 Meccano Set," said Mr. Harley, "Then I experimented with the components to make the best use of as many as possible of them so as to reduce to the minimum the number of extras to be bought. This was almost like a Chinese puzzle and lots of fantastic ideas came up before the simple one I adopted. The result was the Steam-driven Trip Hammer shown in my photographs. It uses the majority of the No.1 Set parts, plus the parts supplied with the Steam Engine, and only needs the addition of a 1" and a 3" Pulley. It looks good, gives a nice, old-fashioned impression and, with a bit of tin covering about half of the spirit burner to reduce the heat, will run for over half an hour without attention – without attention, that is, from an operator; it attracts a lot of attention and interest from visitors!"

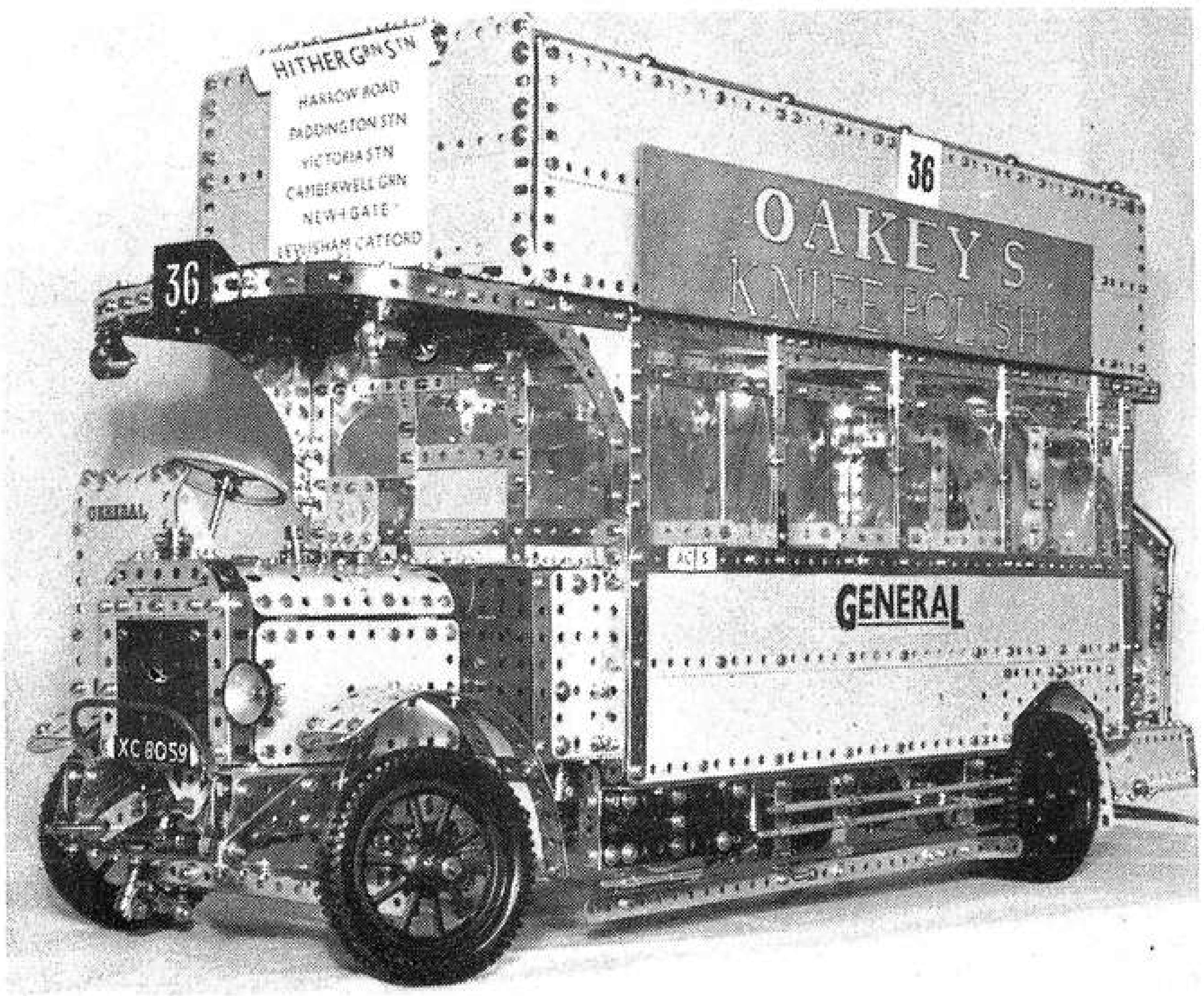
Construction is pretty clear from Mr. Harley's photographs. The Steam Engine baseplate is extended by a 5½" x 2½" Flanged Plate connected to the baseplate by 2½" Strips 1. Two vertical 5½" Strips 2 are bolted to the Engine sideplates, these Strips being connected by two 2½" x ½" Double Angle Strips, one at the top and one bolted through the fifth holes down of the Strips. Journalled in the second holes of the Strips is a 3½" Rod on which a ½" Pulley and a 3" Pulley are fixed, the former between the Strips and the latter on the outer end of the Rod. The 3" Pulley is connected by a Cord driving band to the pulley incorporated in the Steam Engine flywheel, while the ½" Pulley is connected by another Cord band to a 1½" Pulley 3 fixed on a 3½" Rod journalled in the top centre holes of the Steam Engine sideplates. Also fixed on this Rod is a simple cam assembly built up from an 8-hole Bush Wheel to which two opposing Fishplates are bolted.

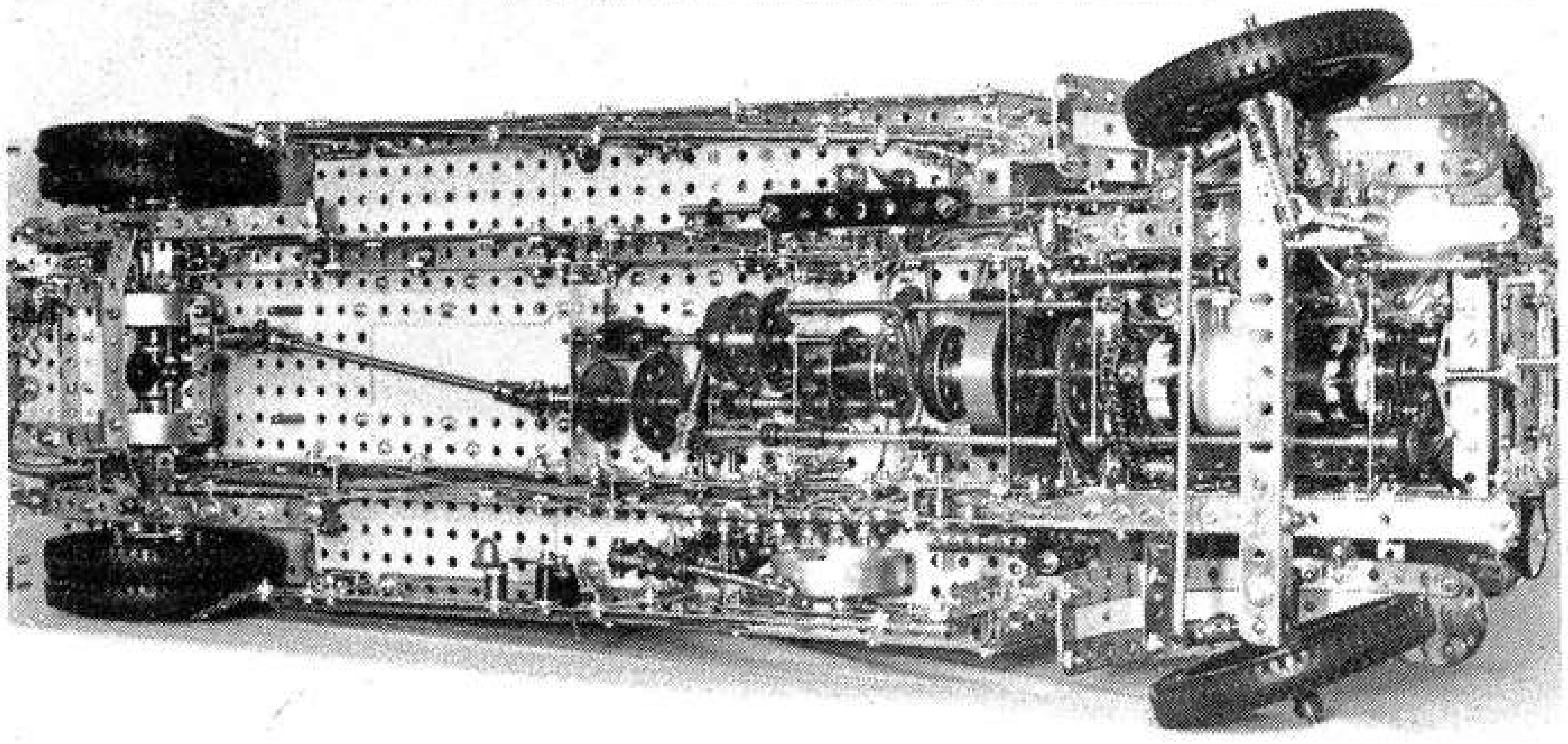
As the cam revolves, the Fishplates "trip" the actual hammer, which is built up from two 5½" Strips

Top of page and below, two views of a simple, but effective live steam Trip Hammer powered by the Meccano Steam Engine and built by Mr. Basil Harley of Little Barrington, Burford, Oxon.









Three different views of a superb Vintage Bus designed and built by Michael Martin of Watford, Herts. Based on a pre-war London Transport K-type Double-decker, it is packed with detail and working features, including comprehensive chassis mechanism, as shown by the underside view on the right.

bolted, as shown, to a Double Bracket 4, a nut being mounted on the securing Bolt between the Strips to separate them. The Double Bracket pivots on a 1" Rod journalled in the apex hole of two Trunnions 5 bolted to the top of the Flanged Plate, while the outer ends of the Strips are bolted to Angle Brackets arranged to form double brackets, to the lugs of which two Flat Trunnions 6 are secured. The completed hammer strikes a 1" Pulley secured to the top of the Flanged Plate, as shown – and that is it! Not a difficult model, I think you will agree, but before leaving it, I would like to make the point that the Steam Engine must be treated with respect. It does operate from live steam and can cause a nasty burn if handled wrongly. Take Care!

PARTS REQUIRED

4- 2	1-18b	1-24	1- 40
2- 5	1-19b	2-35	2- 48a
2-10	1-21	22-37a	1- 52
1-11	1-22	20-37b	2-111c
4-12	1-23a	6-38	2-126
2-16			2-126a

VINTAGE BUS

A highly successful display piece at Meccano Exhibitions over the past year or so has been a remotely controlled Single Deck Bus built by Mr. Michael Edwards of Watford, Herts. Well, Michael has been bus modelling again and, in my opinion, his latest masterpiece surpassed the Single Decker. It's a vintage Double-deck Bus based on a London Transport K-type which was in general service in London earlier this century. And, as the accompanying illustrations show, it's a beauty!

Extremely realistic in overall design, it is also packed with working features: steering, clutch, 3-speed-and-reverse gearbox, differential and transmission. Powered by a 6-speed Motor, it can be driven (in a selected gear) either from the cab, or remotely, using trailing wires. It has full seating, both in the "lower saloon" and on the open-top upper deck, and also features full interior, canopy and head lighting. In addition, the model also incorporates a couple of somewhat unusual features in the shape of a working bell, with authentic cord linkage, and a transistorised hooter, wired to the control panel.

In sending me the photographs reproduced here, Mr. Edwards said that he had "made an effort to make the model as authentic as possible, having visited the London Transport Collection at Brentford where an original K-type is on display." I do not hesitate to say that he has succeeded! (I understand that Mr. Edwards will have the Bus at the Henley Exhibition in September. I look forward to seeing it there.)

MORE ON MESHING

In April's "Among the Model-builders" we gave some suggestions for unorthordox gear meshing at non-standard spacing, submitted by Mr. R.R. Hauton of Lincoln. Sight of these suggestions has prompted Mr. Bert Halliday of London to make some additional suggestions of his own on the same subject.

"Last year." he said, "I made a simple framework of Corner Gussets

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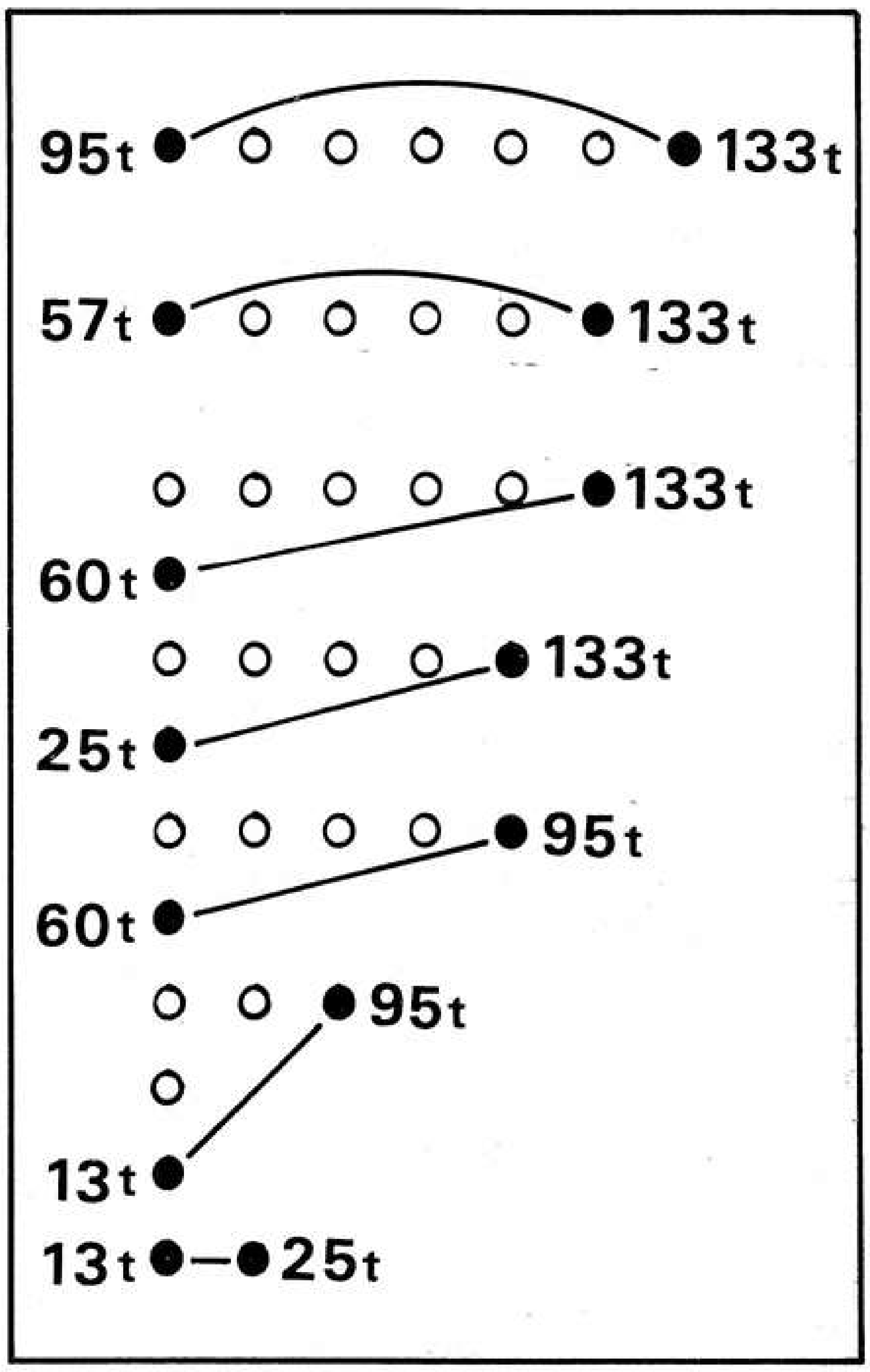
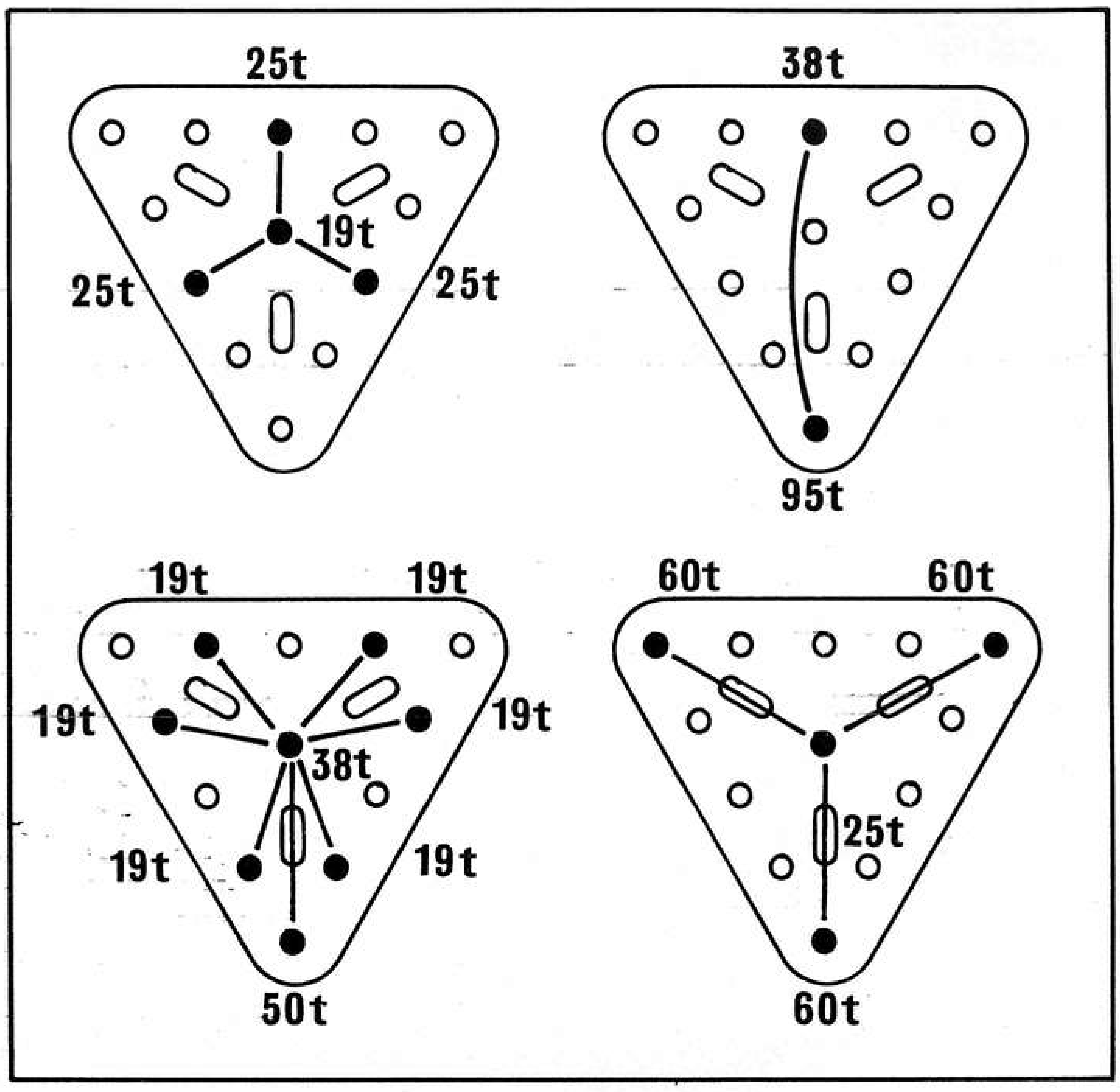
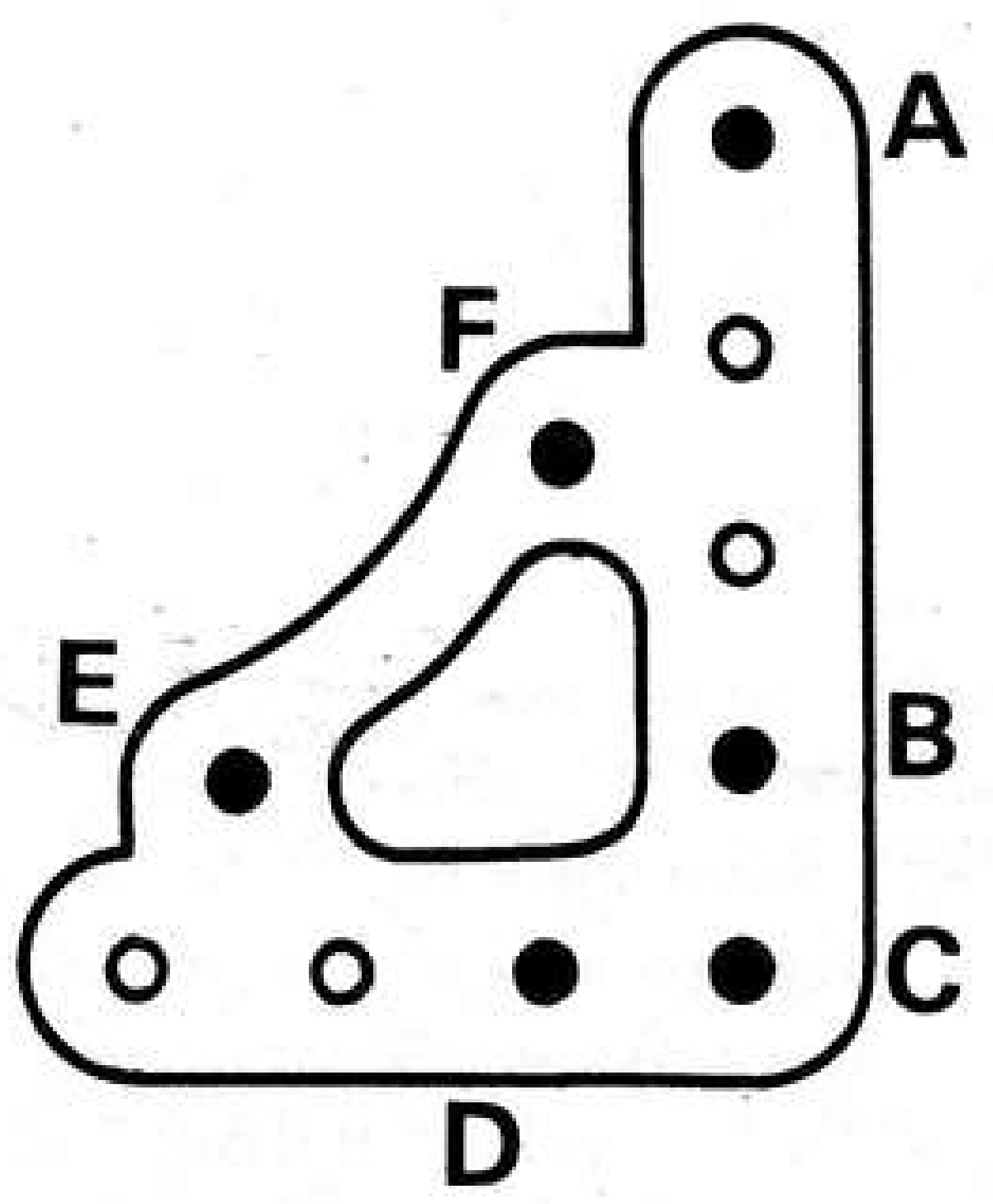






AXLE-GEAR NOTATIONS

F – A	25t 38t	E – F	38t 50t
F – B	25t 38t	B – E	38t 57t
F – E	25t 60t	C – E	38t 60t
A – F	15t 50t	D – F	38t 57t
B – F	15t 50t	C – F	38t 60t

Above and left, some more examples of non-standard meshing, these suggested by Mr. Bert Halliday of London. The black dots, of course, represent the holes in which the supporting axles would be mounted; the figures (e.g. 95t, 25t, etc.) indicate the Meccano gears, identified by their number of teeth, carried on those axles. The 13t gear indicated in the top left diagram is the final drive Pinion from a No. 1 Clockwork Motor. With reference to the Corner Gusset (left), the vacant holes allow the Gusset to be bolted to any standard Plate, Girder, etc. without use of slotted holes.

←

bolted to the round holes of 1½" Flat Girders, and these were bolted to the flanges of a 2½" x 1½" Flanged Plate and extended upwards for clearance purposes to the limits of the slotted holes. The arrangement revealed the startling possibilities of the innocent-looking Corner Gusset as the framework of a gearbox embracing several unorthordox ratios, on the original 4-axle configuration marked A – B – E – F in my diagram (reproduced here). Later, the holes marked C and D revealed other possible ratios, and you are still left with vacant, normally-spaced holes for fix-the Corner Gussets to Plates or Girders, as required.

"To date." continued Mr. Halliday""I have not progressed further with my findings, but I would consider that, with intermediate or extension Corner Gussets, half-shafts could be used easily, and with extended axles and various take-offs from these, the possibility the arrangement offers to Meccano 'Crane Men' as a pretty compact gearbox is virtually limitless. And, with most of the gear trains having a part fifth and/or third ratio characteristic, they must finish-up as a 'whole' ratio somewhere along the line – all without having to clamp cranks, etc. over slotted holes."

In addition to his Corner Gusset idea, Mr. Halliday also provided some suggested spacings using straightforward Plates or Strips as axle supports and he further suggested some very interesting spacing, using the holes in 2½" Triangular Plates. All his ideas are reproduced here. Before leaving the subject, however, I would like to apologise for an error which occurred in the first spacing diagram on page 44 of the last issue. In the lower suggestion in this diagram we indicated that two 57-teeth Gear Wheels would mesh when their supporting axles were separated by a distance of three clear holes. In fact, two clear holes should separate them. Sorry for the error.

CABLE CAR RAILWAY

On a different subject, Meccano Modellers are often accused of hiding their lights under bushels and this can certainly be true. However, there can be mitigating circumstances, as Mr. A.L. Ford of Hutton, Brentwood, Essex explained in a letter to us earlier this year. "I have visited three Meccano Exhibitions." said Mr. Ford, "and have found much of interest on each occasion, but I have never taken anything along as my models get too big and present transport problems. For instance, I made a Cable Car Railway last year with the idea of taking it to Henley, but, alas, it grew bigger and bigger and transport presented an insoluble problem!"

Mr. Ford makes a good point, but, although he was unable to get the model to Henley, he has been kind enough to supply us with the accompanying photographs of his model, taken by his friend, Mr. P. Povey, and an interesting model it is. Fully operational, it consists of two stations with cable cars running between them on an "endless belt" system. Both stations contain pay boxes, turn-stiles, and doors to platforms which open and shut automatically. The top station also contains toilets, as well as tables and chairs and a lift, the latter driven by a clockwork motor. The Cable Car operation, itself, is powered by a 6-speed Motor housed in the lower building.

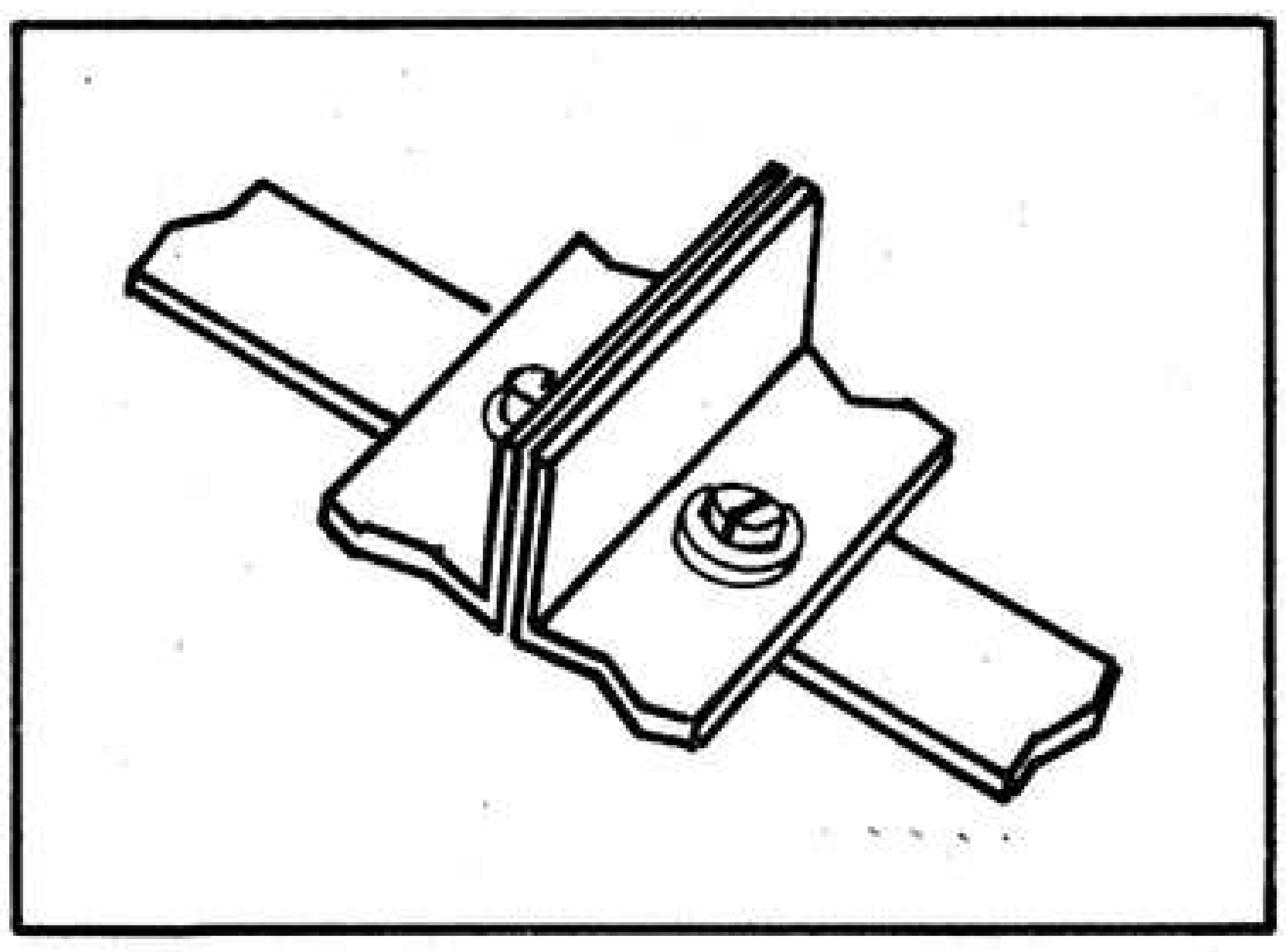
Since building this model, Mr. Ford has visited Switzerland where he saw a privately-owned single-car cable railway used by a farmer to get to his work up a mountain at Kandersteg. This has given him an idea for a new model which he believes could be transported to Henley in partly-dismantled form. He hopes to have a try at it, so, if all goes well, perhaps we will see it there.

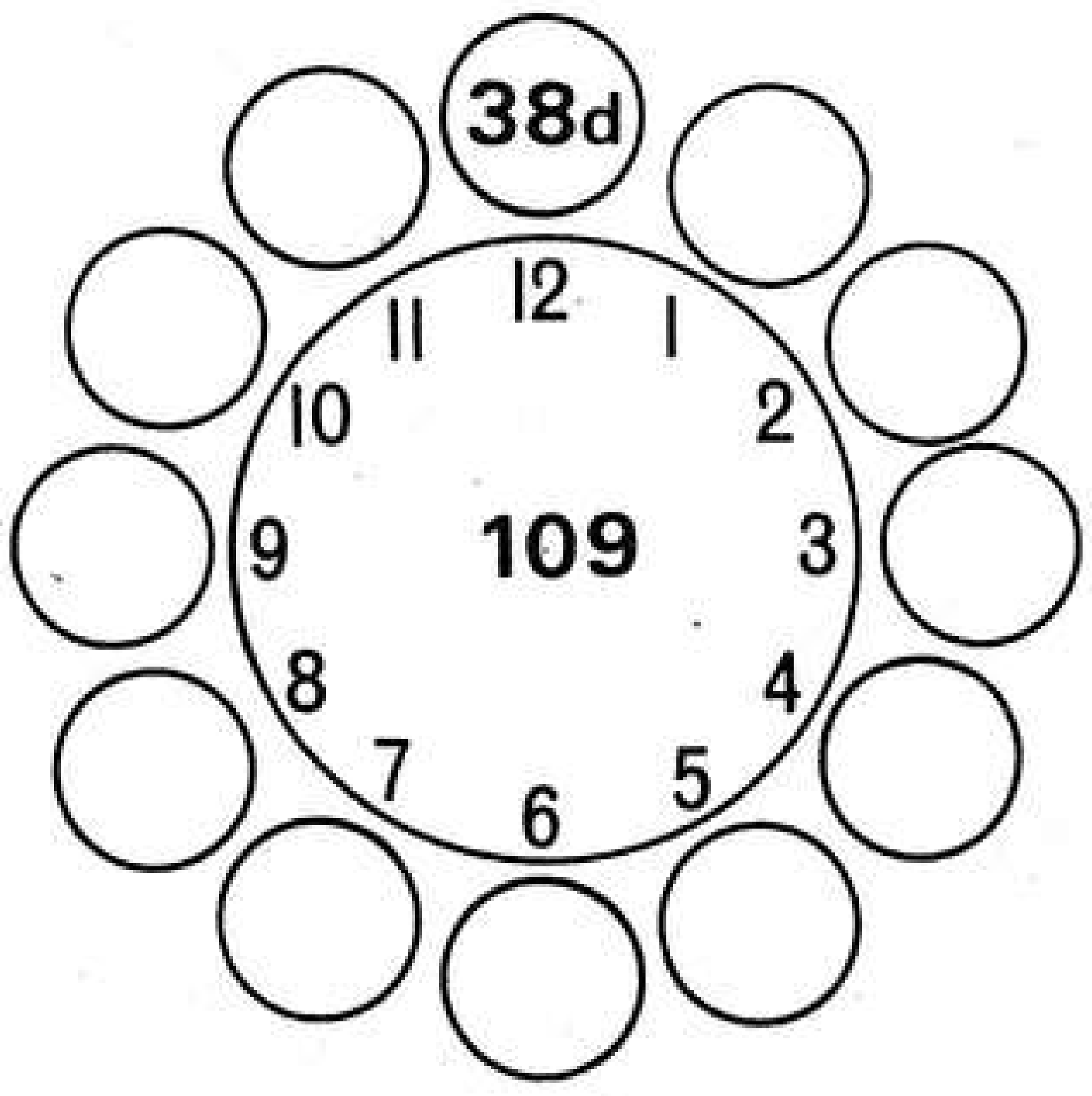
BENDING STRIPS

Bending Meccano Strips is not ideal policy, as I am sure we all agree, but the fact is that it can be advantageous to bend a strip on occasions. With this in mind, Bernard Dunkley of Mill Hill, London, has provided a useful tip for an easy method of performing the bending operation.

"If ever you wish to make a sharp bend in a Perforated Strip *between* two holes", writes Bernard, "Bolt pairs of Angle Girders at right-angles to the Strip, through the holes adjacent to the required sharp bend. the flanges of the Girders should point away from the bend. By then squeezing the flanges together, you can bend the Strip to any (obtuse or right) angle you wish."

A rough sketch illustrating Mr. B. Dunkley's hint for bending Strips.



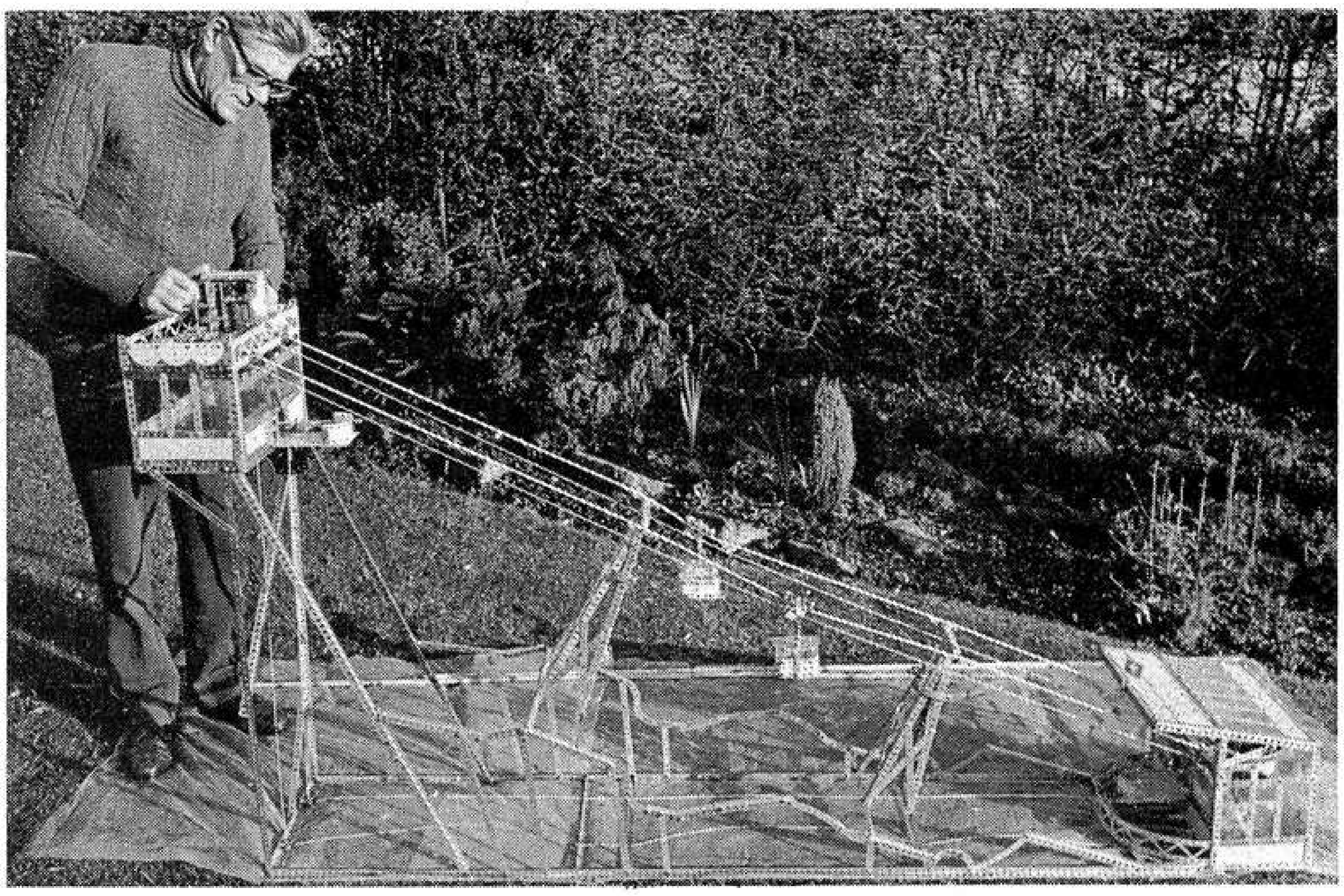


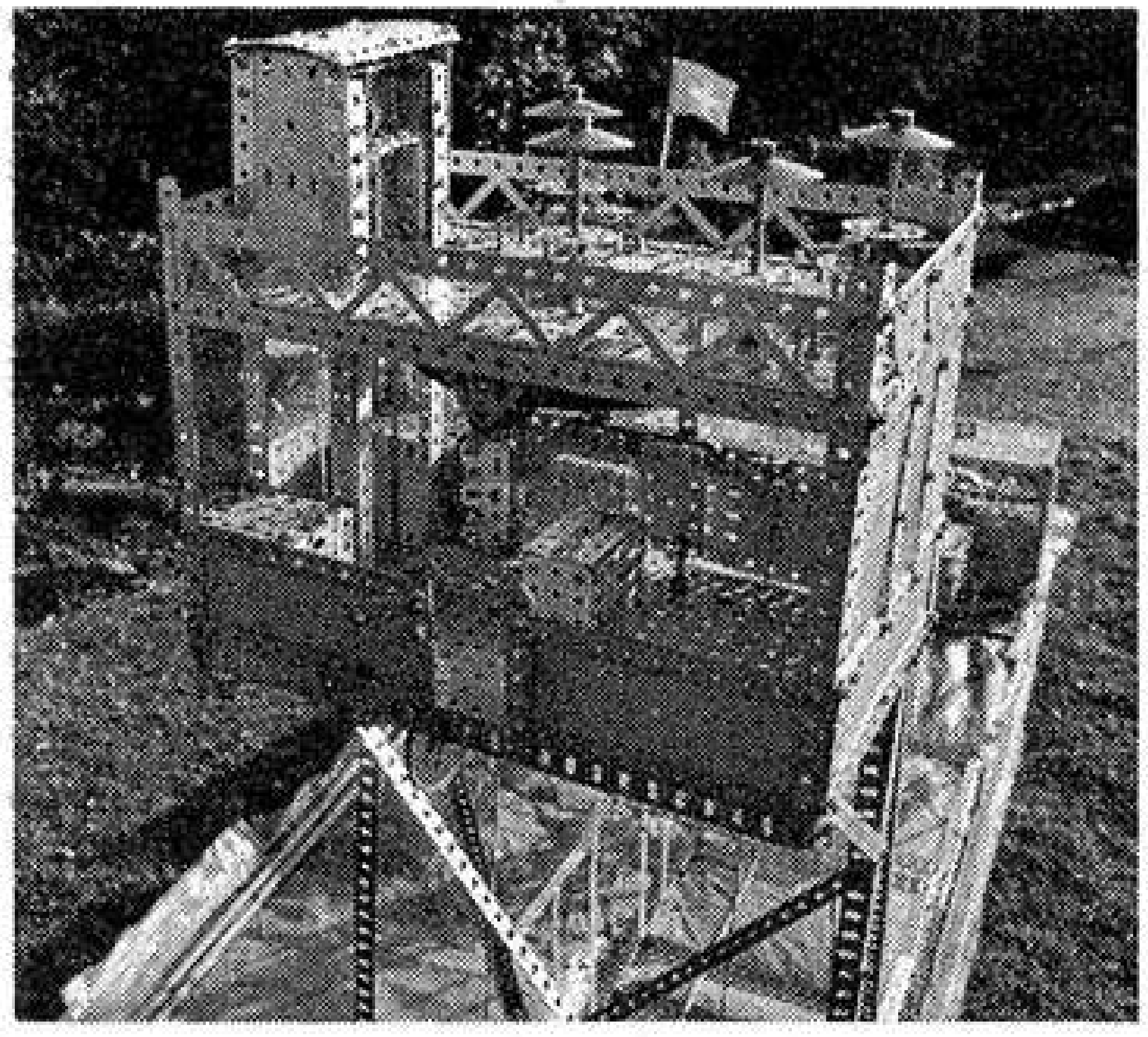
PUZZLE IT OUT

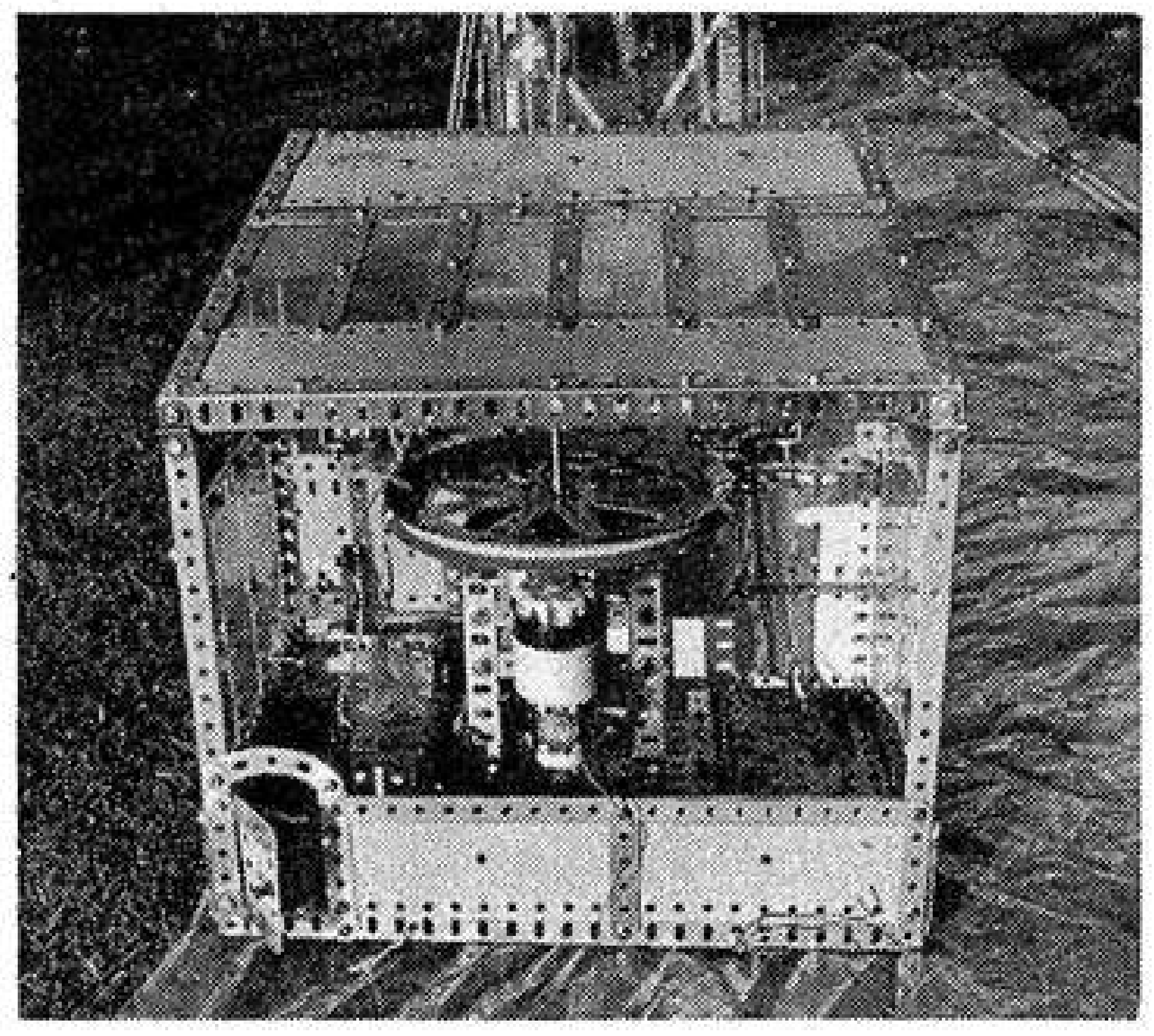
And, finally, for something completely different we have a little brain teazer sent in by Dennis Higginson of the Stevenage M.C. Arrange twelve ¾" Washers as shown above round a Face Plate. Take one Washer at a time, pass it over two Washers and place it on the third Washer. Take another Washer and repeat the process until, after six moves, you have six pairs of Washers in the positions 1, 2, 3, 4, 5 and 6. You may travel in either direction round the Face Plate at each move, and the two Washers jumped over maybe either single Washers or pairs.

Have a go, but if you can't manage it you'll find the correct answer on page 89 of this issue.

Below, Mr. A.L. Ford of Hutton, Brentwood, Essex, pictured with the Cable Car Railway he built last year. When planning this model, Mr. Ford intended to take it along to the last Henley Exhibition – but, when built, it was too big to carry! Upper right, a close-up view of the upper station of the Cable Railway showing the turnstile inside the entrance and the tables and chairs on the "observation platform." Lower right, a view of the power unit and driving mechanism in the lower station.

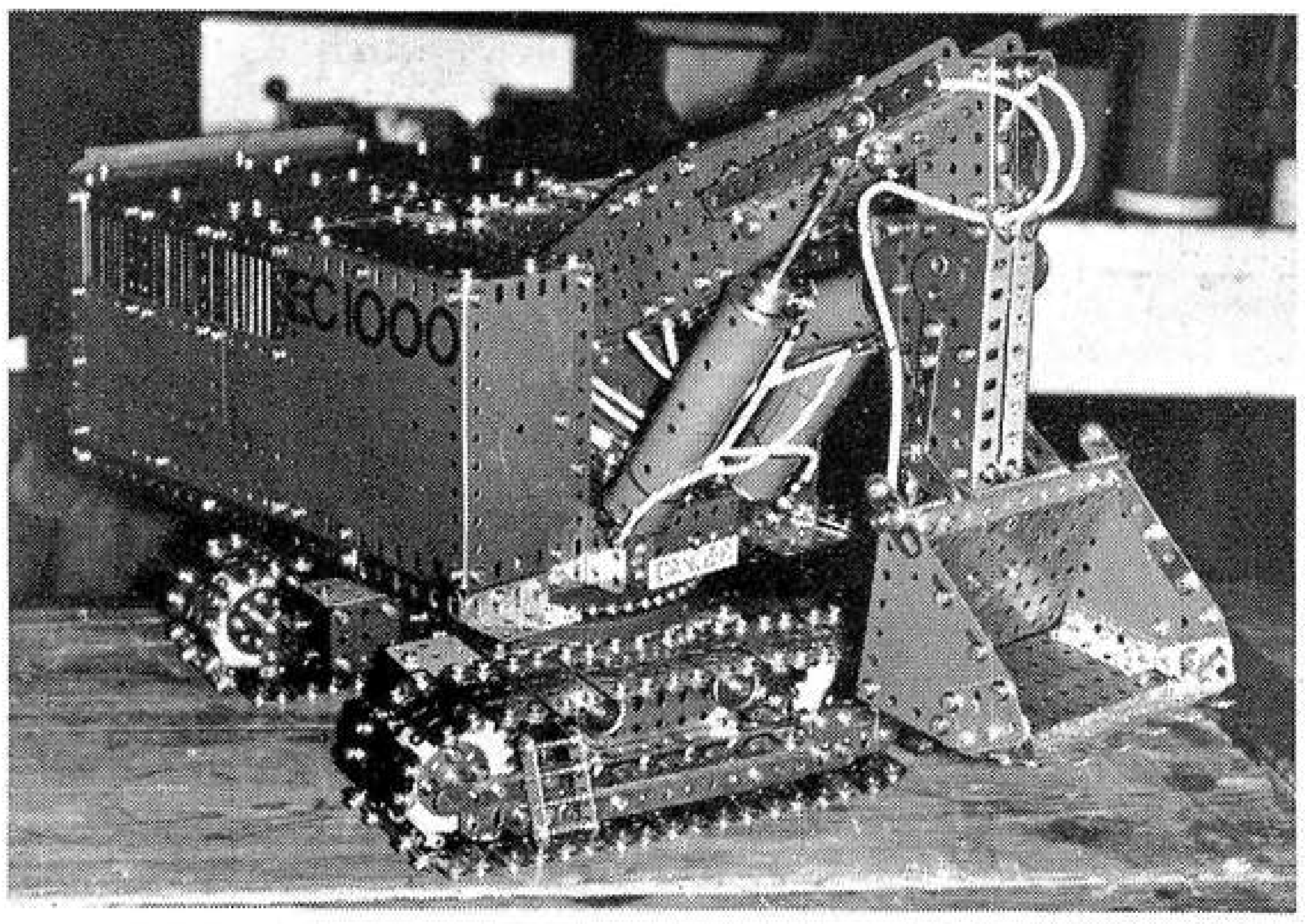




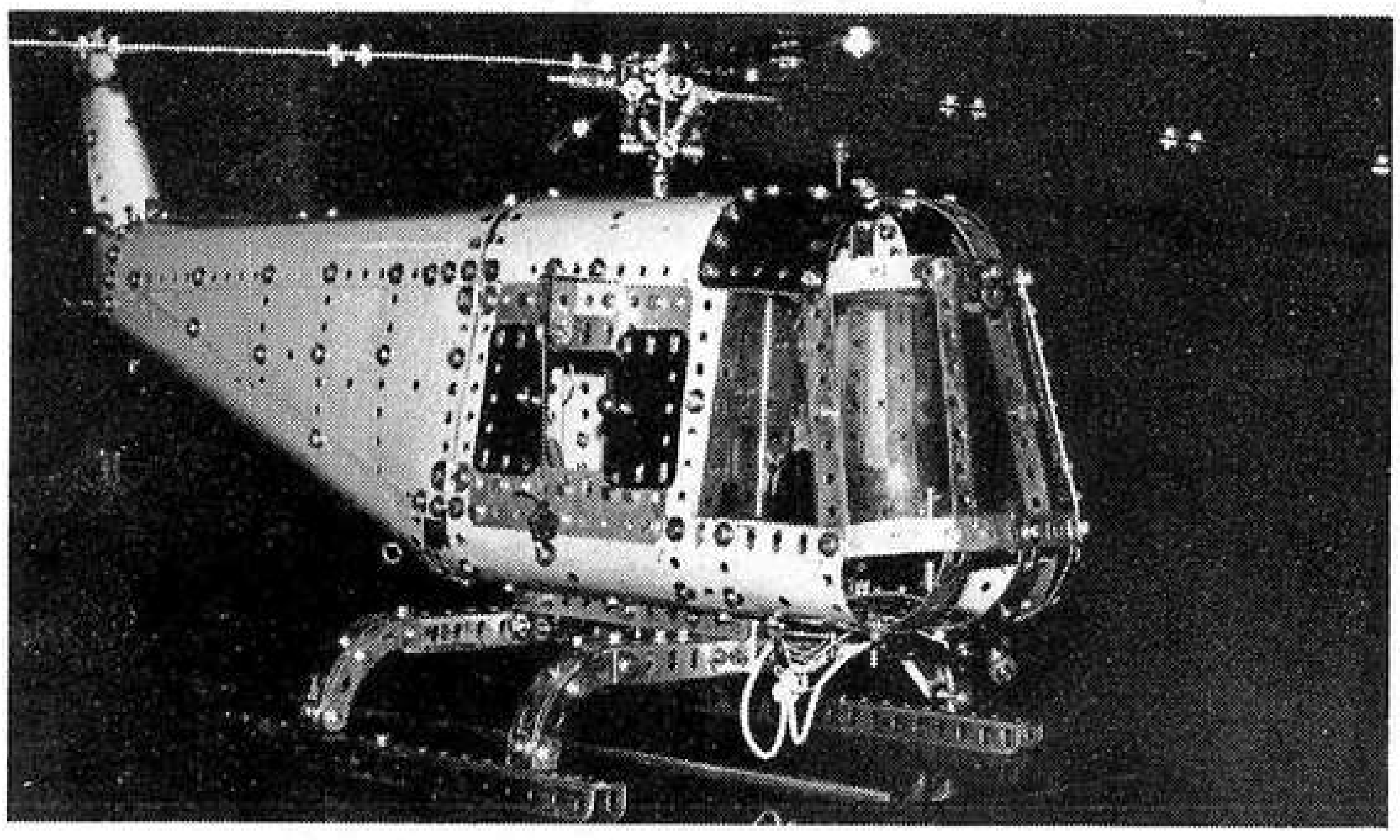


SCENE AT CLITHEROE

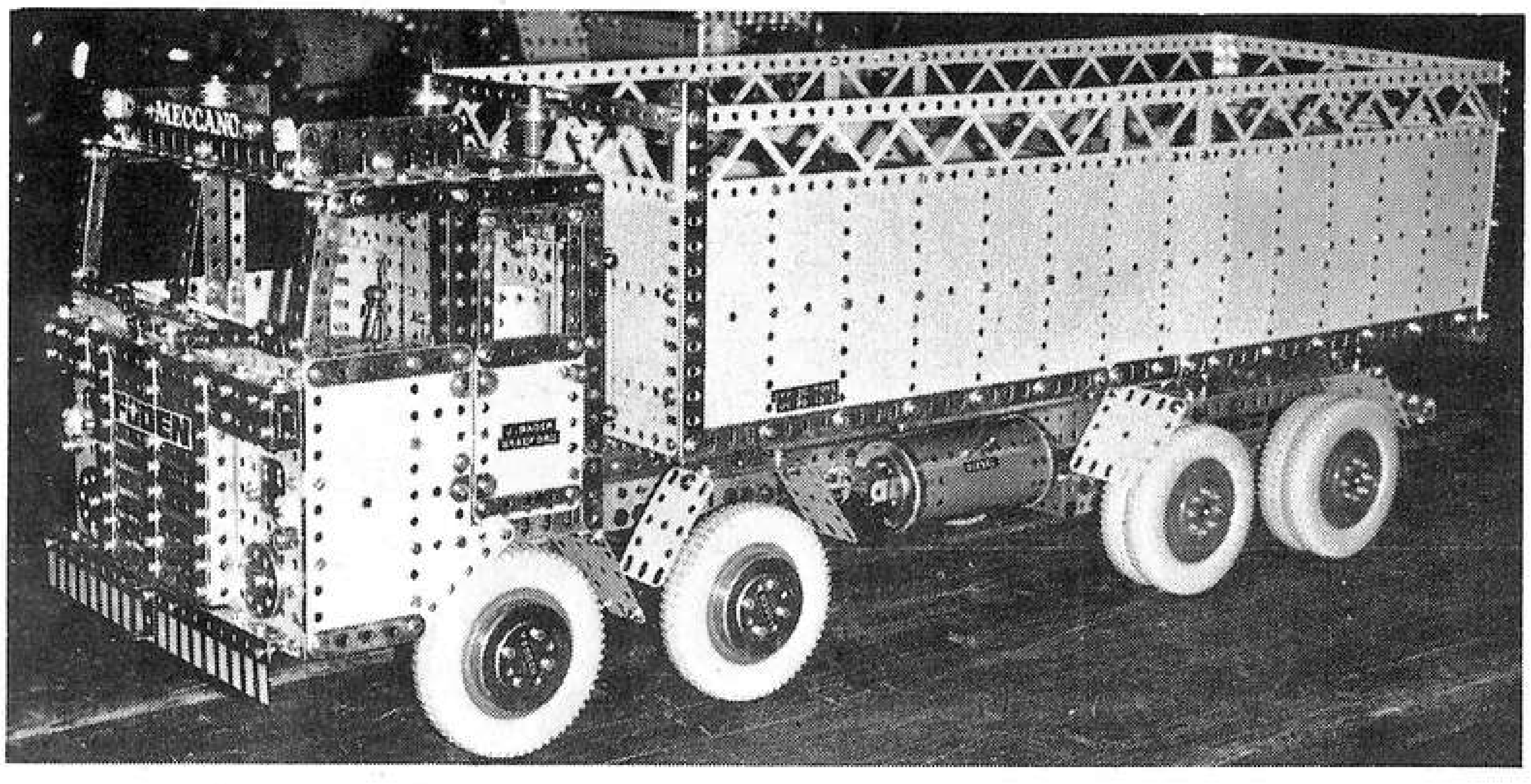
A LOOK AT SOME OF THE MODELS ON SHOW AT THE MECCANO EXHIBITION ORGANISED BY THE NORTH WEST MECCANO GUILD AND HELD IN CLITHEROE ON SATURDAY, 3rd APRIL

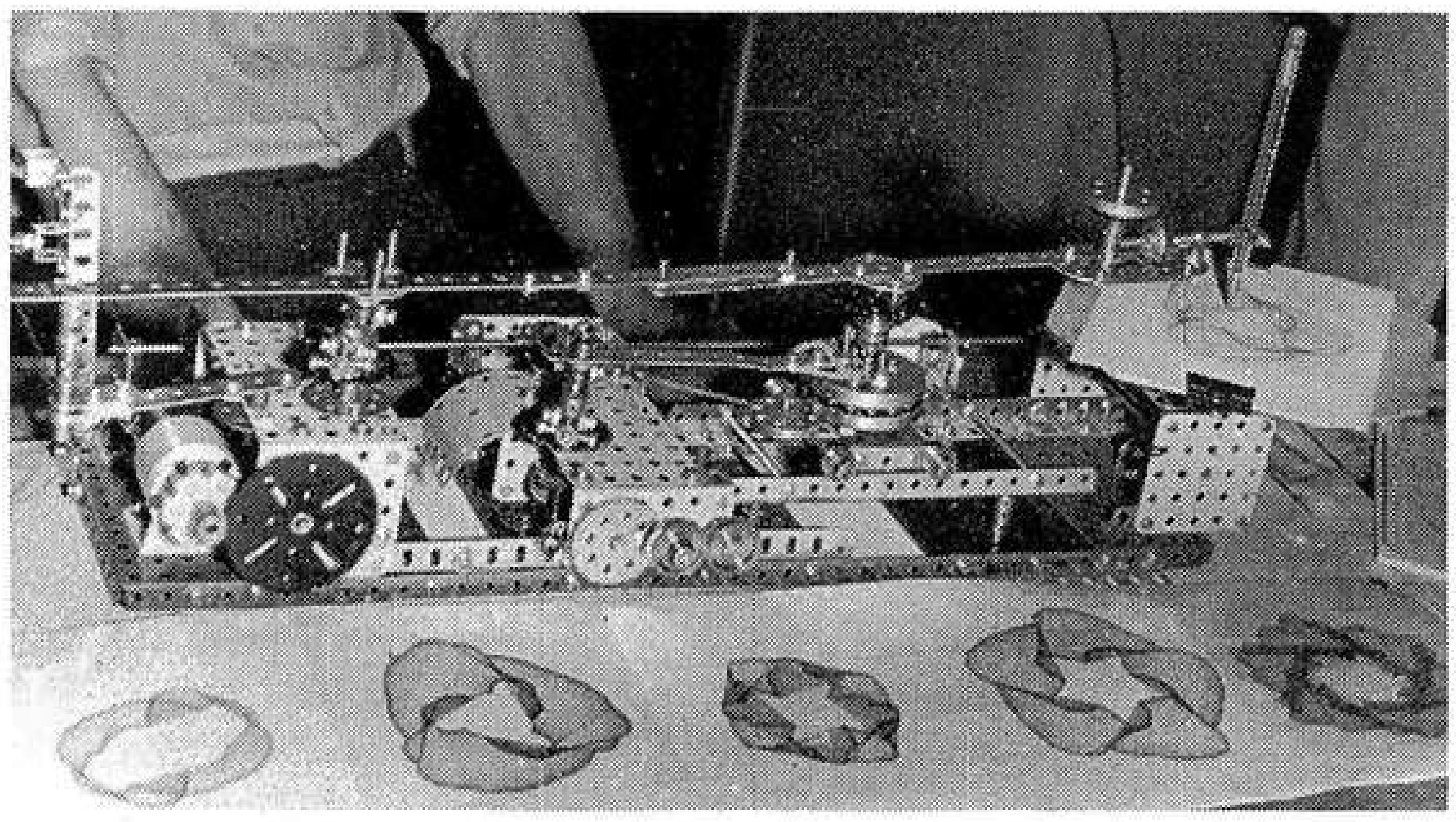


Above, a Poclaince EC 1000 Face Shovel Excavator by Mike Pashley of Sheffield. Below, a realistic Helicopter by Bill Barker of Clitheroe. The model sports powered variable-angle rotor blades and a fully glazed cockpit.



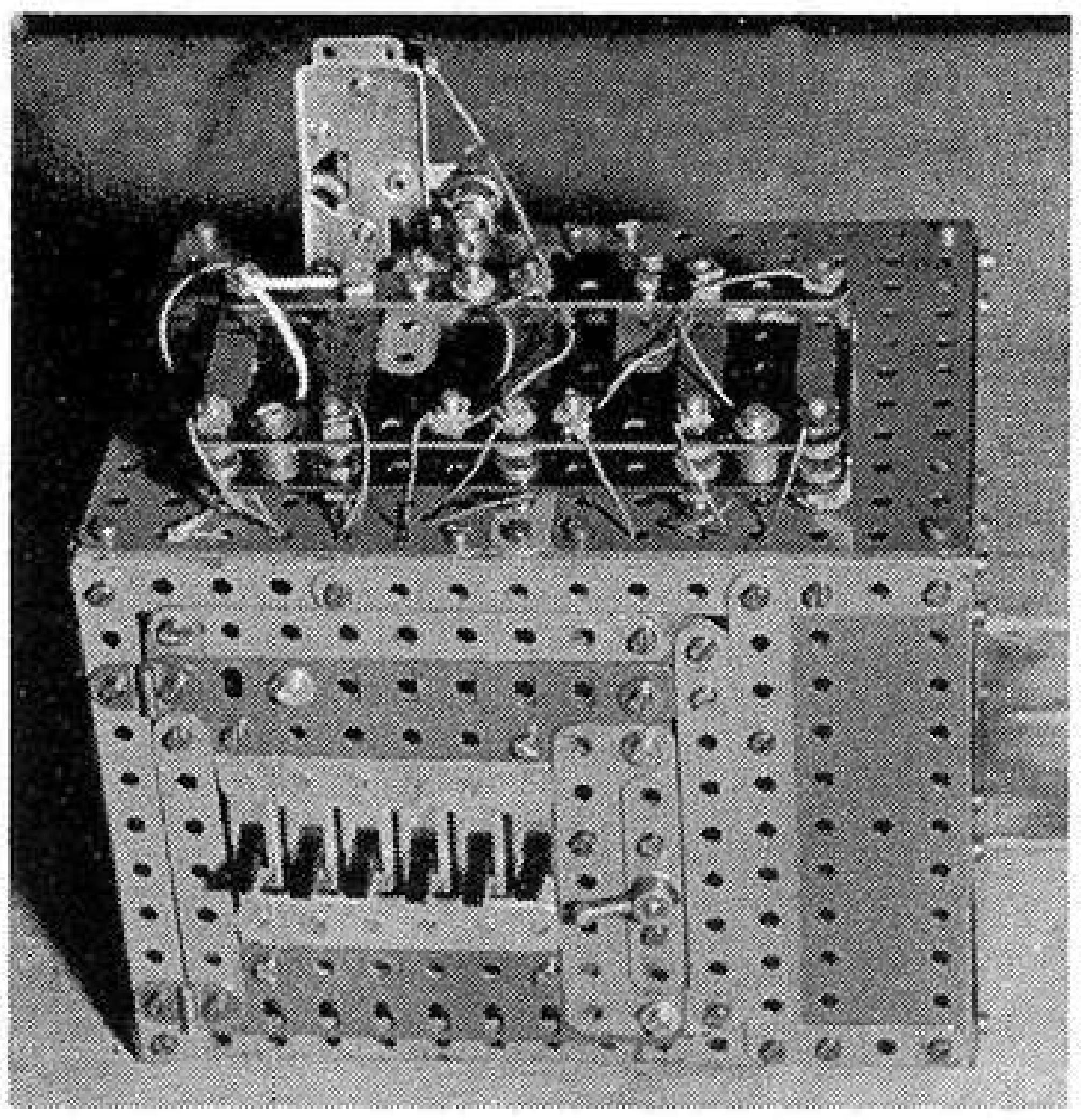
Below, a superb Foden Heavy Lorry Featuring a fully detailed cab, gearbox and chassis built by John Bader of Bradford.

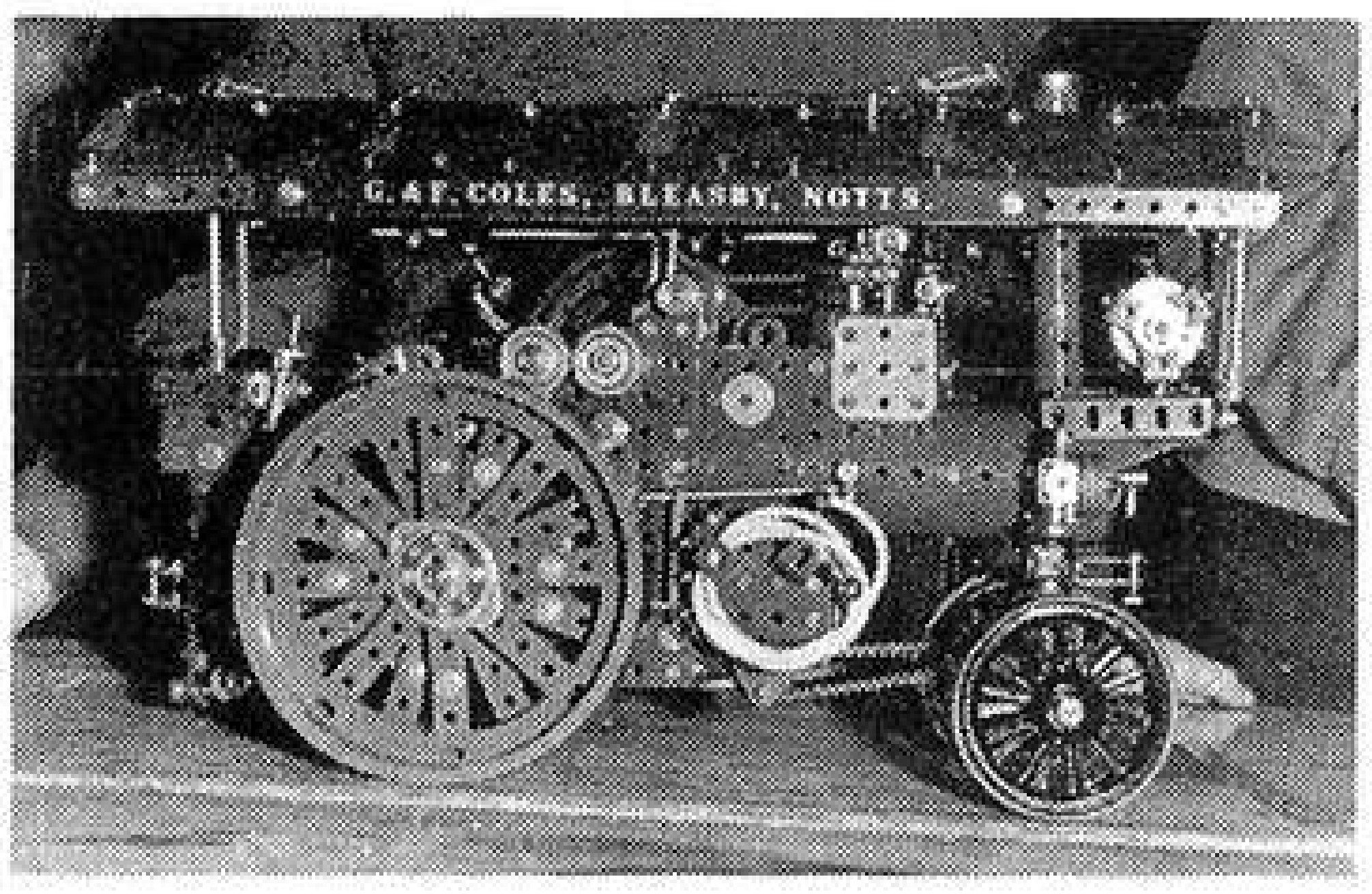




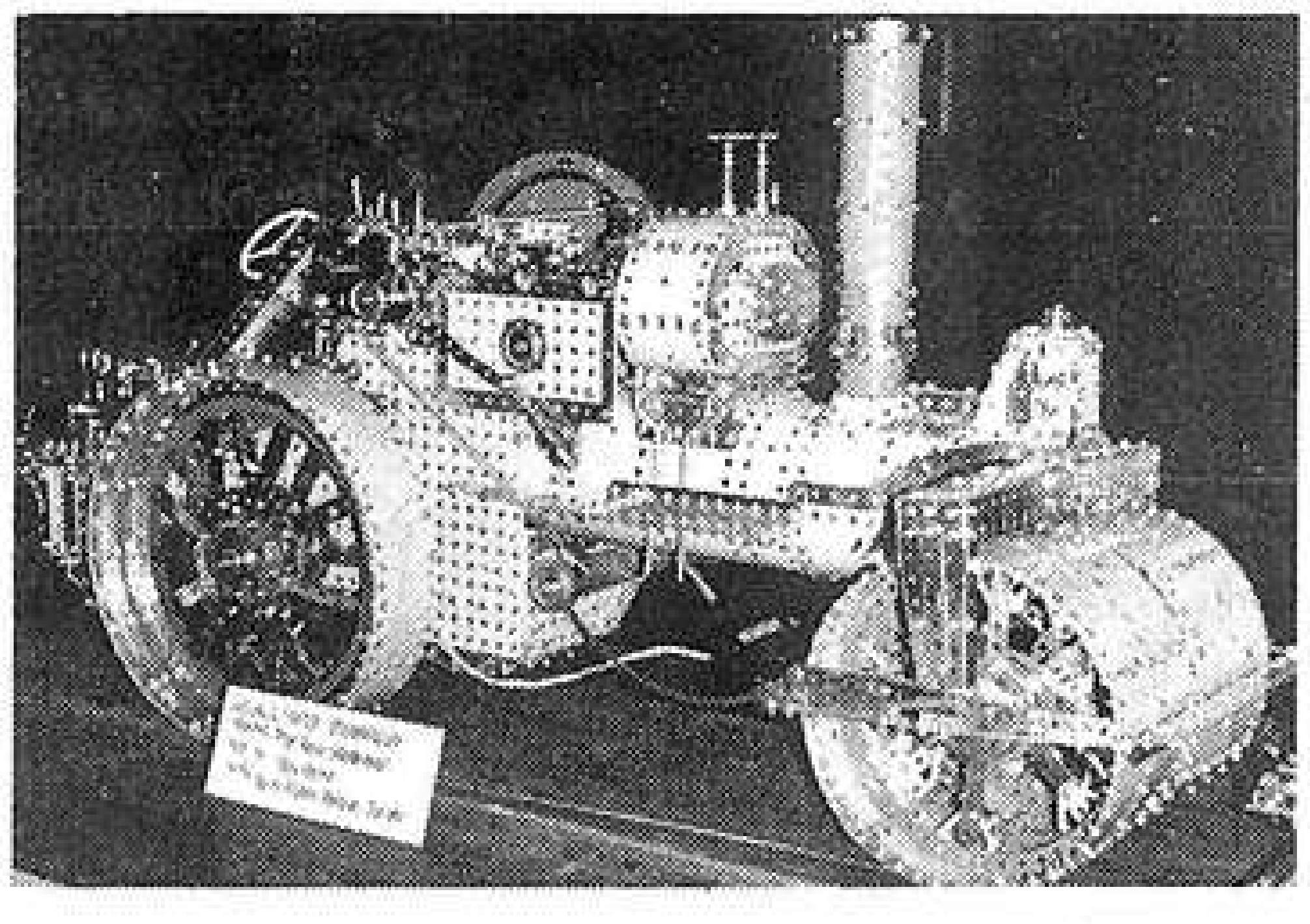
Top right, an excellent Meccanograph built by Hal Hussey of Burtonwood. Warrington. Powered by a Motor-with-Gearbox.

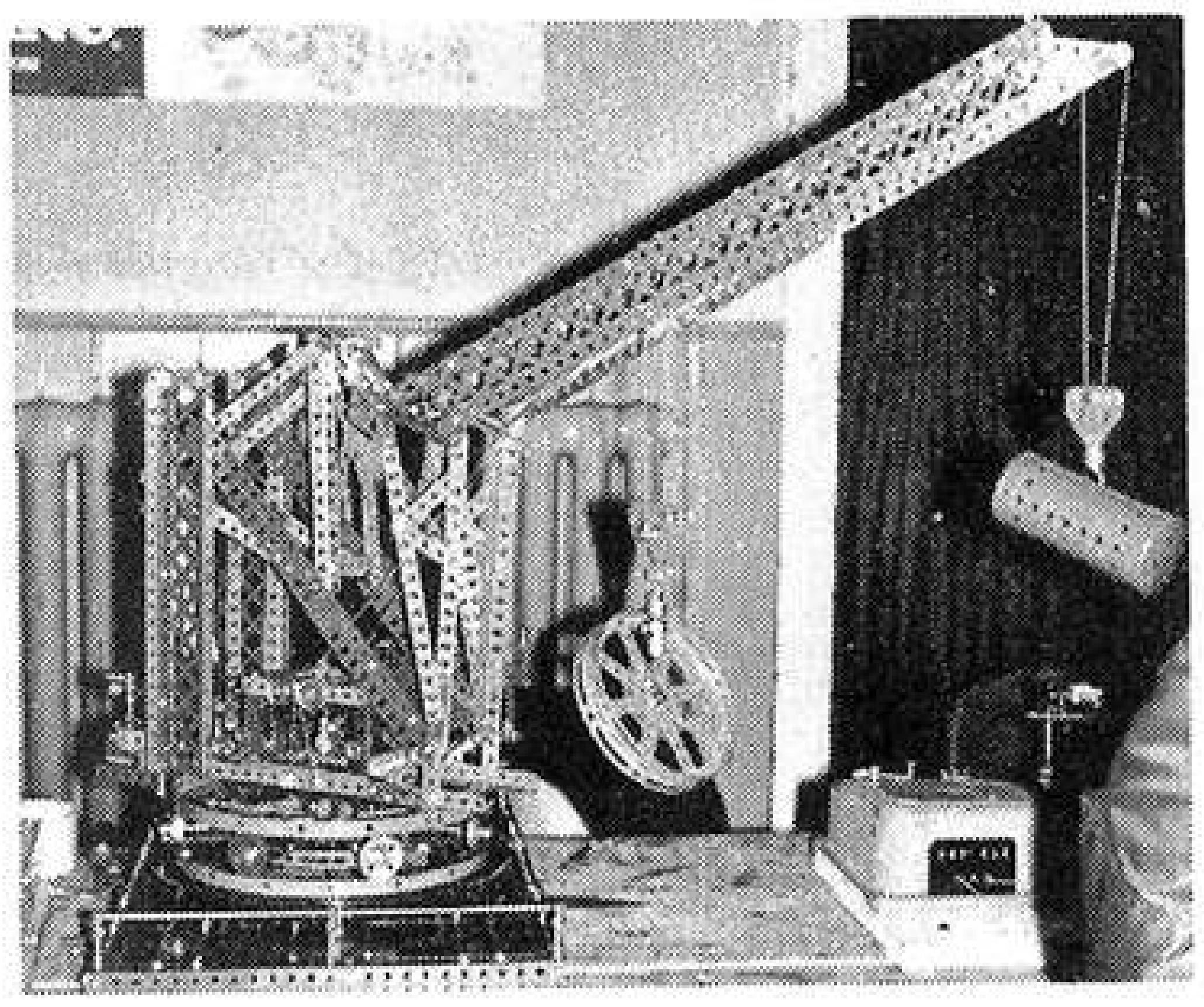
Right centre, an interesting Electrical Combination Safe by Graham Brown of Leyland, Lancs. Lower right, a nicely-detailed Showman's Engine built by Geoff Coles and daughter Francine of Bleasby, Notts.



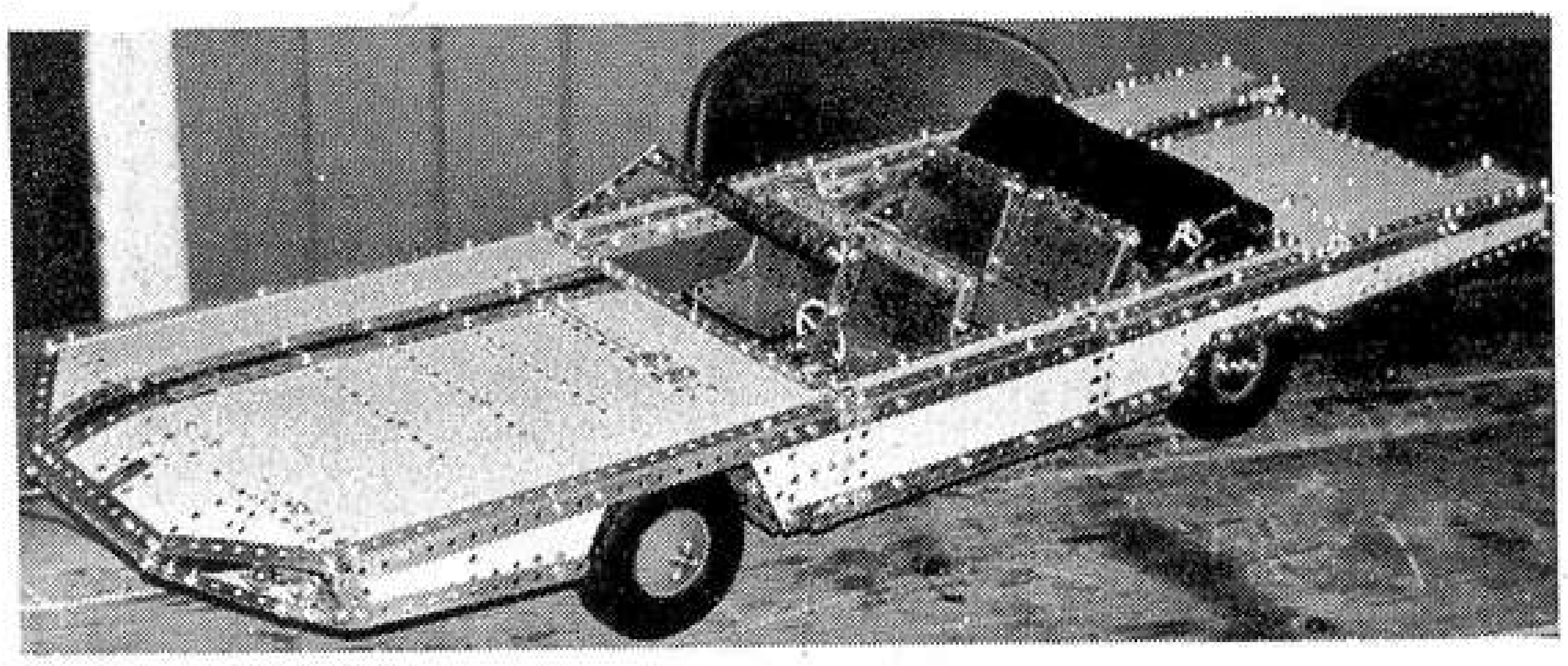


Below, a beautiful Aveling & Porter Steamroller designed by Alf Reeve (Maidenhead) and built by Chris Barron of Northallerton, Yorkshire.

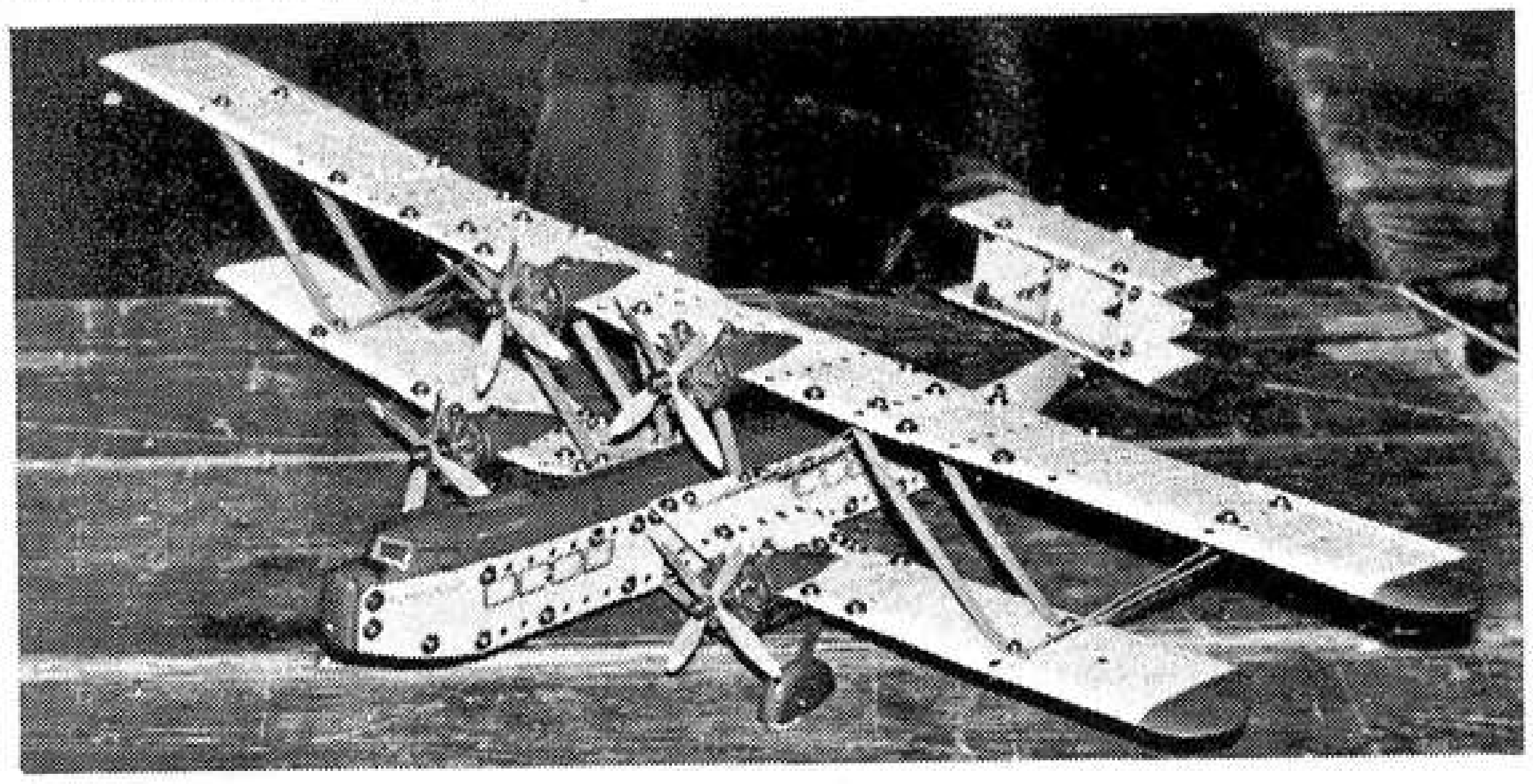




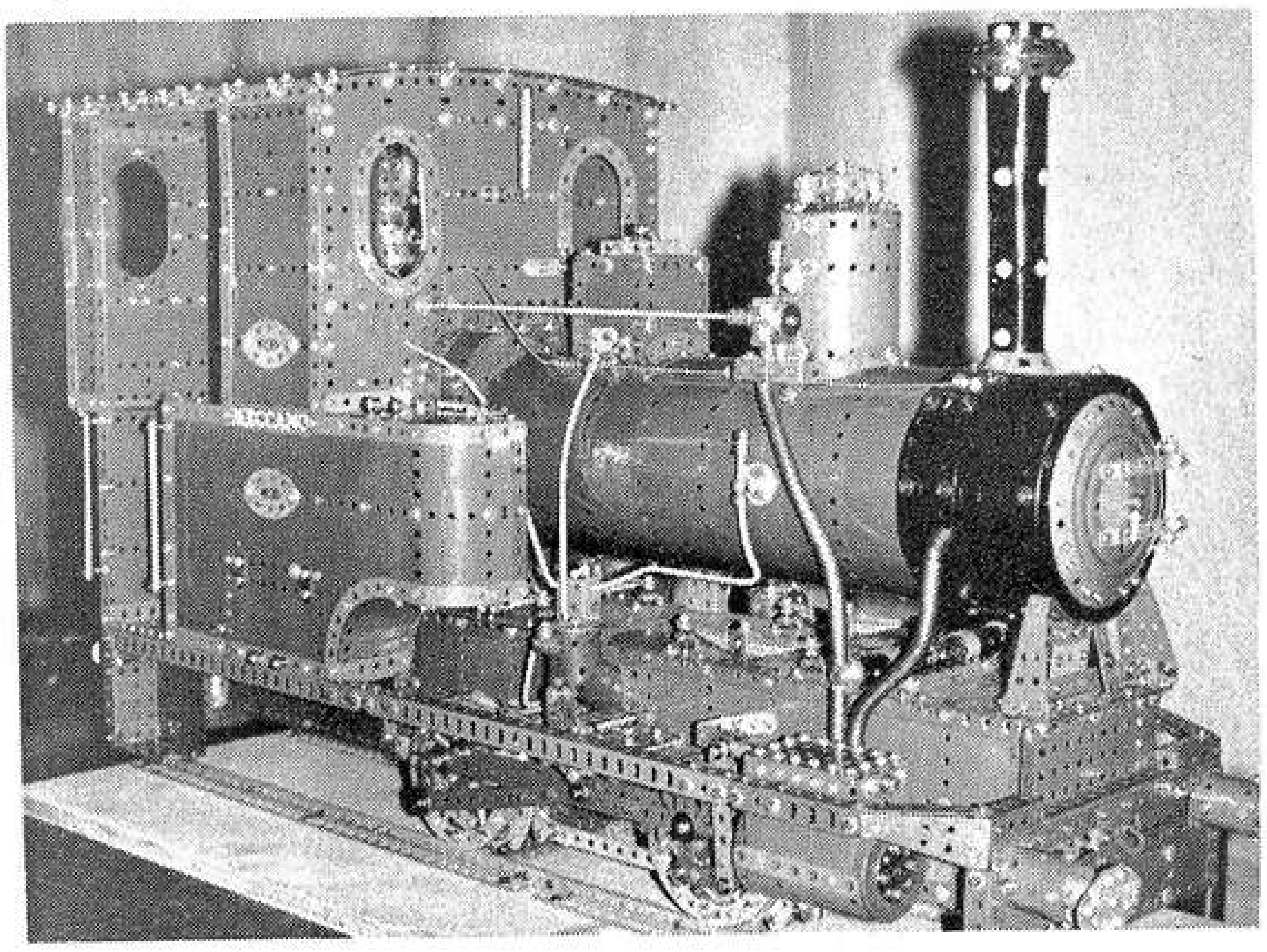
Above, a superb example of the ever-popular supermodel Pontoon Crane, which features a unique luffing motion. This particular model was built by Frank Swindells of Blackpool.

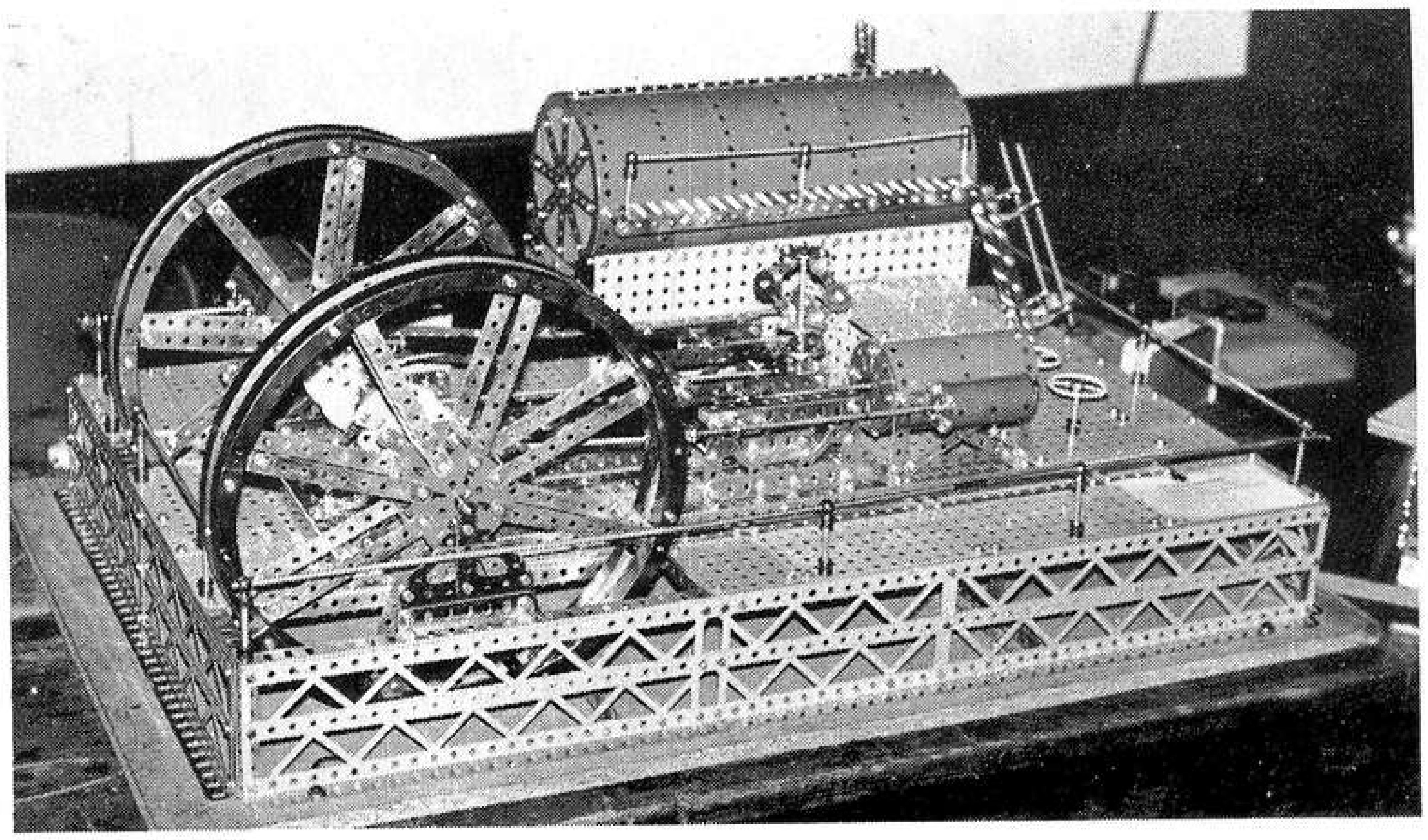


Above, a delightful American Convertible Car by N.W.M.G. Secretary, Michael Walker. Below, a Bi-plane built from a pre-war Aeroplane Constructor Outfit by Alf Reeve of Maidenhead, Berks.

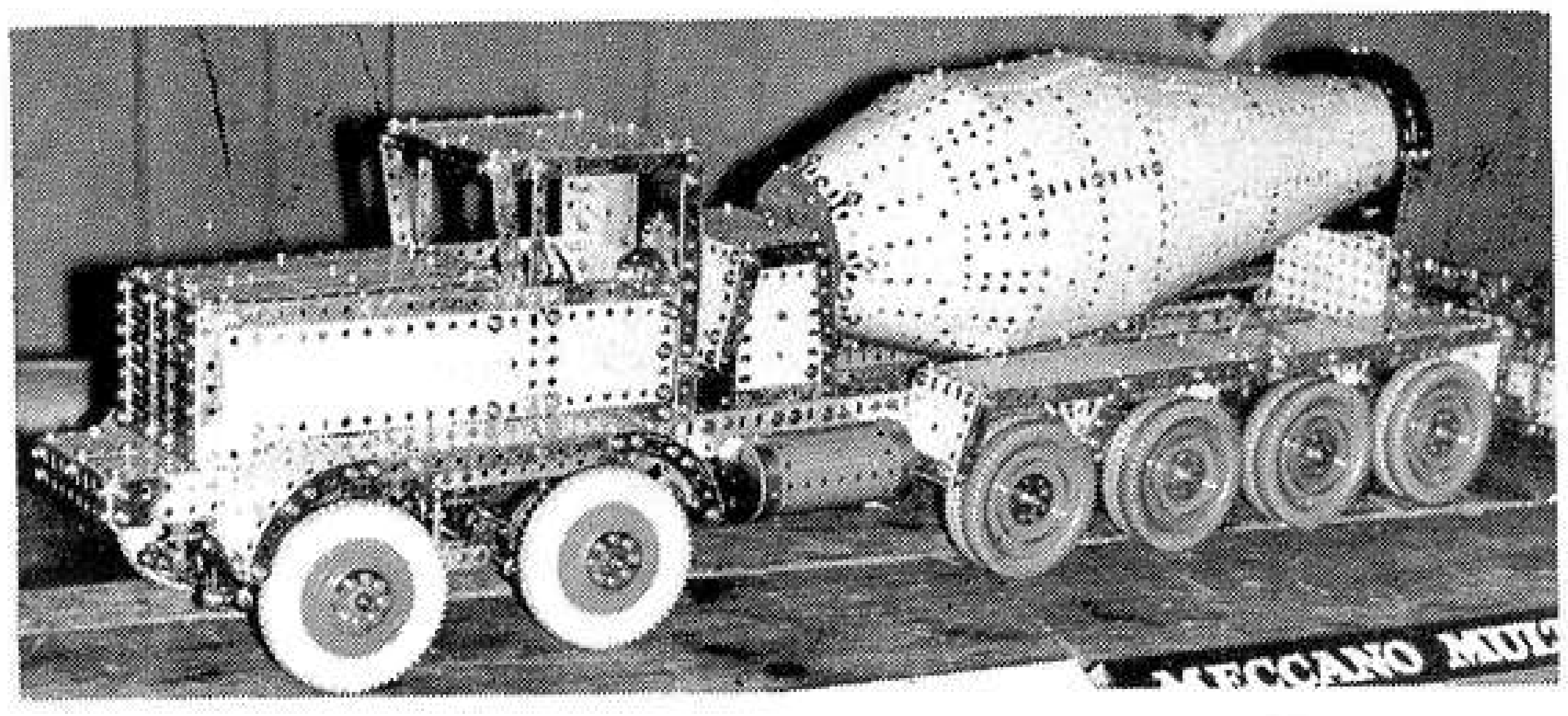


Below, an instantly-appealing large-scale model of a Welsh Narrow Gauge Railway Locomotive by John Nuttall of Leyland, Lancs.

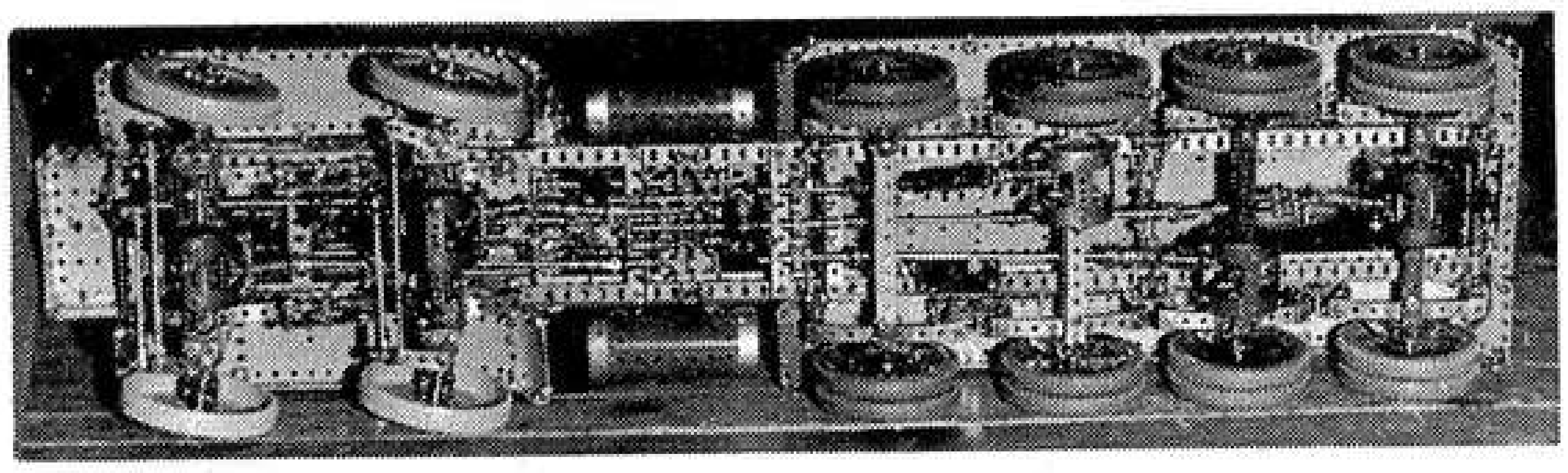




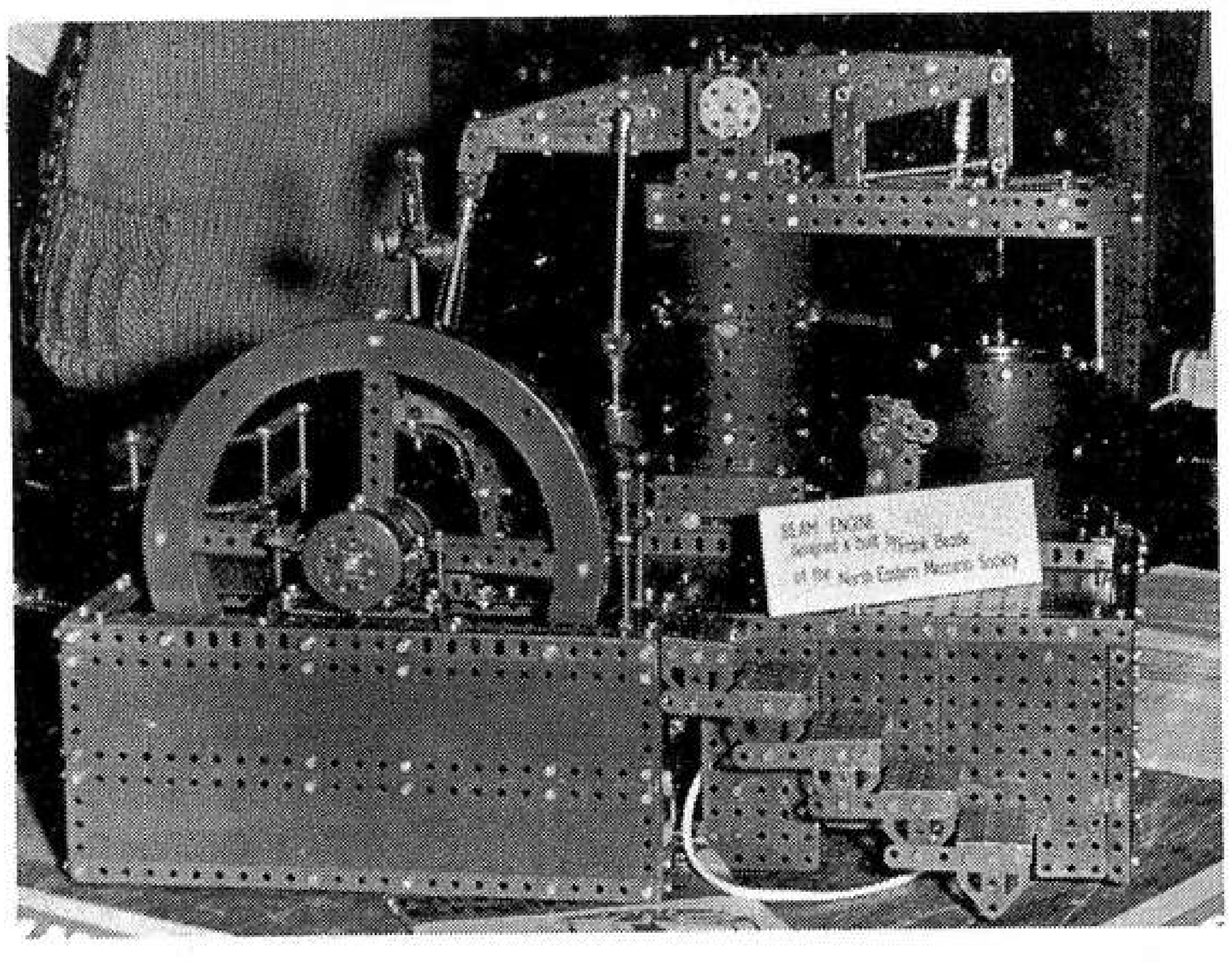
Above, a beautifully-constructed S.M.L. 32 Twin-cylinder Horizontal Engine by Norman Mason of Standish, Wigan.



Above, a large-scale American-type Concrete Mixer Lorry by Martyn Brown of Leyland, Lancs. Features include all-round suspension, a detachable cab and an "operating" mixer. Below, an underside view of Martyn's Mixer, showing its gearbox, differentials, etc.



Below, a first-class Beam Engine, designed and built by Frank Beadle of Darlington.



String along with MMQ and try our

TRIPLE-STRAND PLAITING MACHINE

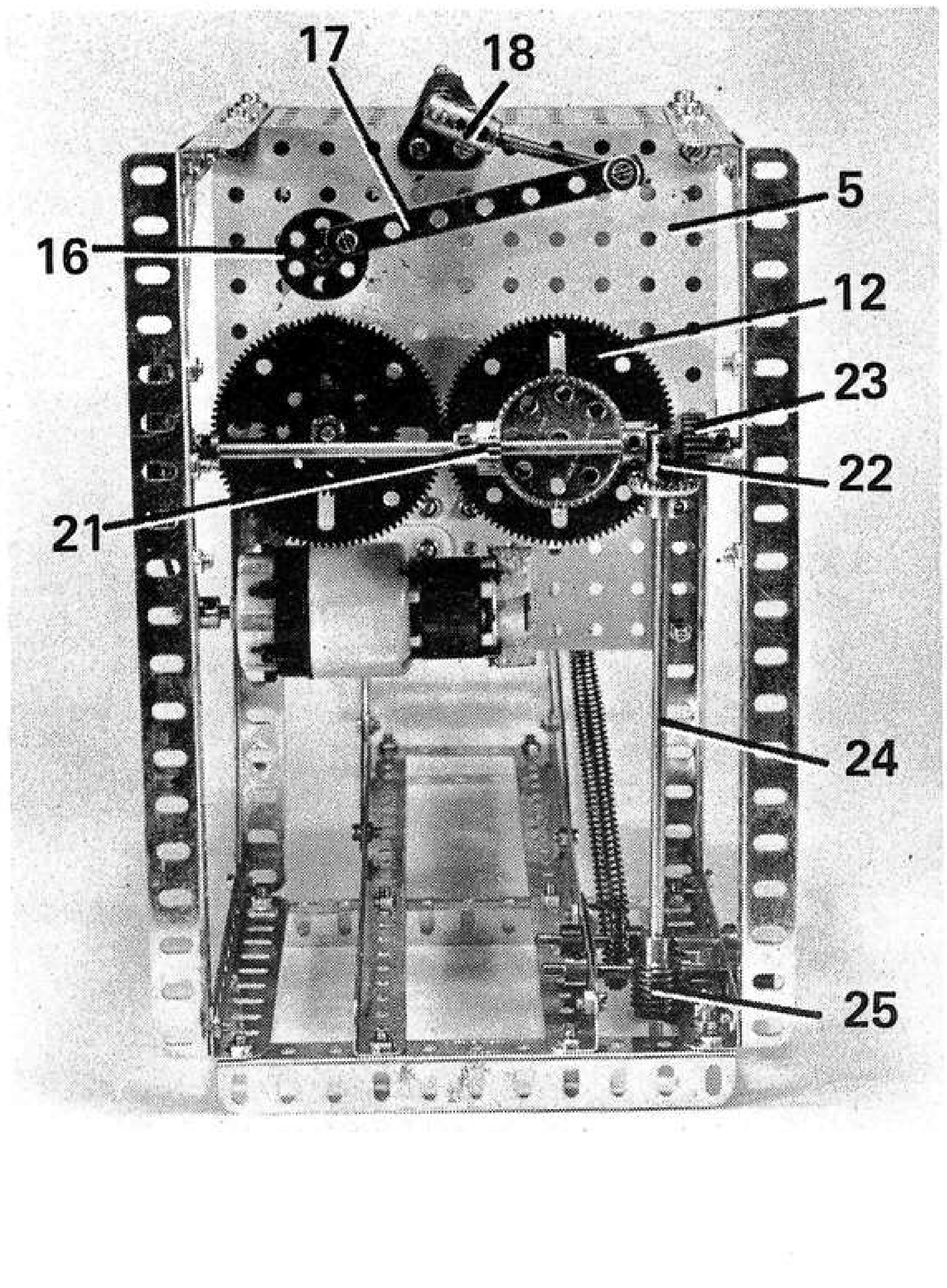
says 'Spanner'

A good working display model

THERE'S NOTHING like a working model to attract attention at an exhibition and you may be sure that, on our Company Stands at the various Toy Trade shows we attend, we always have a good supply of Meccano display models to draw the crowds.

Display models come in a wide variety of shapes and sizes, and we've had some veritable 'giants' in our time – fifteen, twenty, and even thirty feet high! As many readers will know from experience, however, a model does not *need* to be a giant to be a successful display piece. A giant may excite comment, but a small, intricate, *moving* structure can often attract as much attention, and frequently more genuine interest from a viewer. On our Company Stand at the Nuremburg Toy Fair this year, for instance, we exhibited (among many other things, of course!) a little Plaiting Machine. Only sixteen inches tall, it was neat, compact and comparatively uncomplicated, yet I think it drew more attention than any of the other, bigger models on display. Instead of just looking at it, people stopped and *studied* it, and this, I feel, is a good sign of display success.

If buyers at a Toy Fair found the Machine interesting, we thought, how much more would MMQ readers. Indeed, many readers are now active exhibitors in the display field themselves, and the Machine has already proved its value in this area. So, we said, it's one for the Magazine – and here it is, slightly modified to run from a 6-speed Motor.

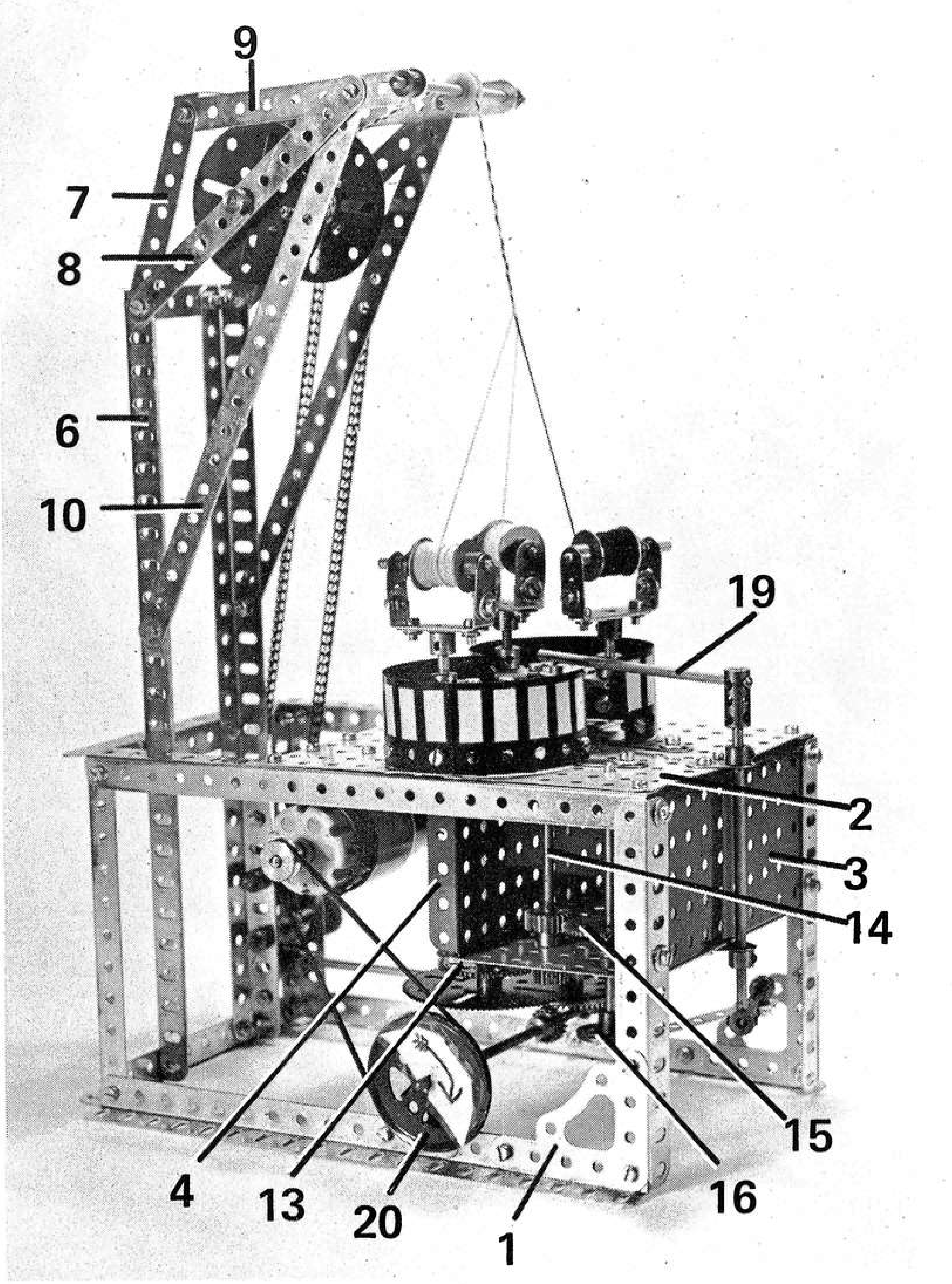


An underside view of the Triple-strand Plaiting Machine described in this article. A general view of the machine is shown on the opposite page. The original model was displayed on the Meccano Stand at this year's Nuremburg Toy Fair, where, despite its small size, it attracted a great deal of attention from trade buyers visiting the show.

CONSTRUCTION

A 9½" x 5½" x 5½" rectangular box framework is built up from Angle Girders, as shown in the illustrations, the lower end of the front 5½" uprights being braced by Corner Gussets 1. Two 5½" x 3½" Flat Plates 2, overlapped one hole, are secured to the top of the frame, while a 5½" x 2½" Flanged Plate 3 is bolted between the upper ends of the front uprights. Another 5½" x 2½" Flanged Plate 4 is bolted to the underside of the top Girders, seven holes in from the front, and a 5½" x 3½" Flat Plate 5 is bolted to the lower flanges of this Plate and Plate 3.

Secured to the rear of the frame are two vertical 12½" Angle Girders 6, connected at the top by a 2½" Strip. Bolted to the upper end of each of these Girders are a 3½" Strip 7 and a 5½" Strip 8, arranged as shown, the upper ends of these Strips being bolted to a horizontal 4½" Strip 9, at the same time fixing a 9½" Strip 10 in place to provide additional bracing. The lower end of this Strip is bolted through the eleventh hole of Angle Girder 6. The Bolts connecting Strips 7 and 9 also fix a 2½" x ½" Double



Angle Strip in place between the Strips at each side of the assembly.

Two locating heads for the bobbin units are each built up from a 6-hole Bush Wheel, to the face of which three 2" Strips 11 are bolted as shown. Note that Washers and/or electrical Thin Washers are used as spacers under these Strips, as necessary, to ensure reasonably horizontal lie. When completed, one of the heads is fixed on the upper end of a vertical 5" Rod held by Collars in the fourth holes in the flanges of Plate 4. Fixed on the Rod beneath the lower Collar is a 2½" Gear Wheel 12 which meshes with another 2½" Gear Wheel on a vertical 4½" Rod journalled in the third holes from the other end in the flanges of Plate 4. This Rod is held in place by a Collar above Plate 2, but, below Plate 5, by a 57-teeth Gear Wheel 13. The second bobbin unit locating head is fixed on the upper end of the Rod.

Gear Wheel 13 meshes with a ½" Pinion on a 3" Rod 14 journalled in Plates 2 and 5. Fixed on this Rod is a ¾" Pinion which meshes with a 50-teeth Gear Wheel 15 on a 4" Rod also journalled in Plates 2 and 5, where it is held in place by a Collar. An electrical 1" Bush Wheel 16 is fixed on the lower end of the Rod. Lock-nutted through one hole in this Bush Wheel is a 3½" Narrow Strip 17, the other end of which is pivotally connected to a Collar on a Flexible Coupling Unit fixed in a Coupling 18. This Coupling is in turn fixed on the lower end of a vertical 5" Rod held by Collars in two 1" Triangular Plates bolted to the front edges of Flat Plates 2 and 5. Another Coupling on the upper end of the Rod carries a horizontal 4" Rod 19 which serves as the 'change-over' sweep.

MOTOR AND DRIVE

A 6-speed Motor, set in the 60: 1 ratio, is now bolted to the underside of one Flat Plate 2 in the position shown. A ½" Pulley on the Motor output shaft is connected by a 10" Driving Band to a 2" Pulley 20 fixed on the end of a 6½" Rod journalled in two 1½" Corner Brackets bolted to the lower Girders of the frame. Also carried on this Rod are a fixed ½" Pinion 21, a fixed Collar, a loose Short Coupling 22 (the Rod passing through one transverse bore of the Coupling) and a fixed ¾" Pinion 23. The latter Pinion and the Collar hold the Short Coupling in position on the Rod. Pinion 21 meshes with a 1½" Contrate Wheel fixed on the lower end of the 5" Rod carrying one of the bobbin unit locating heads, Pinion 23, on the other hand, meshes with a ¾" Contrate Wheel fixed on a 6½" Rod 24 journalled in the longitudinal bore of Short Coupling 22 and in a 1" Corner Bracket bolted to the appropriate corner upright of the framework. Also fixed on the Rod is a Worm 25 which meshes with a ½" Pinion on a 2½" Rod held by a Collar and a ¾" Pinion 26 in the fourth holes of the corner upright and nearby Angle Girders 6. (As the elongated holes of Girder 6 face the upright, a 3½" Strip is bolted to the Girder to provide the circular hole for the Rod). Pinion 26 meshes with a 50-teeth Gear on another 2½" Rod mounted higher up the Girders, this Rod also carrying 1" Sprocket 27.

Drive from Sprocket Wheel 27 is transferred by Sprocket Chain to another 1" Sprocket Wheel on the shaft carrying the take-up spool for

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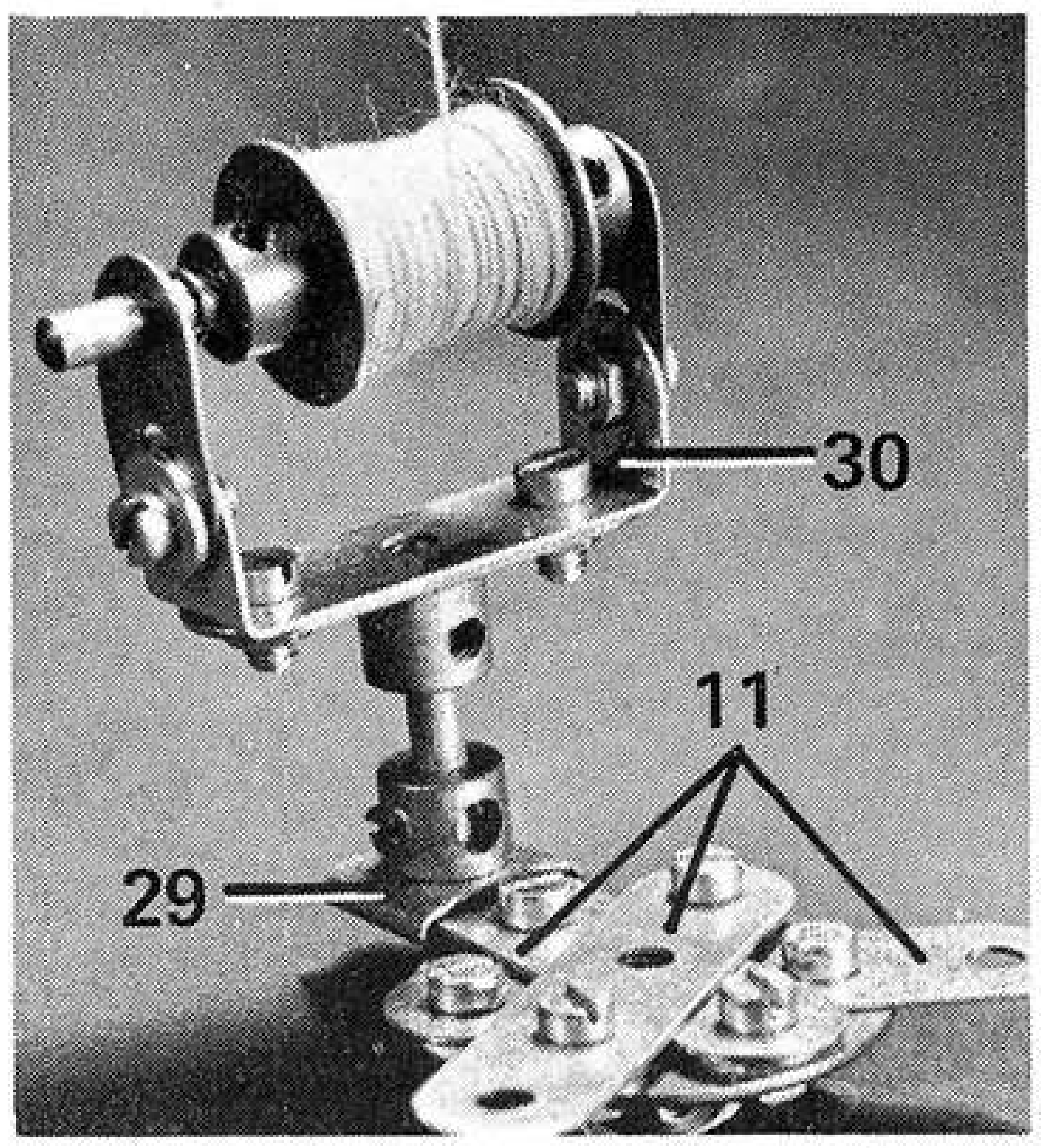
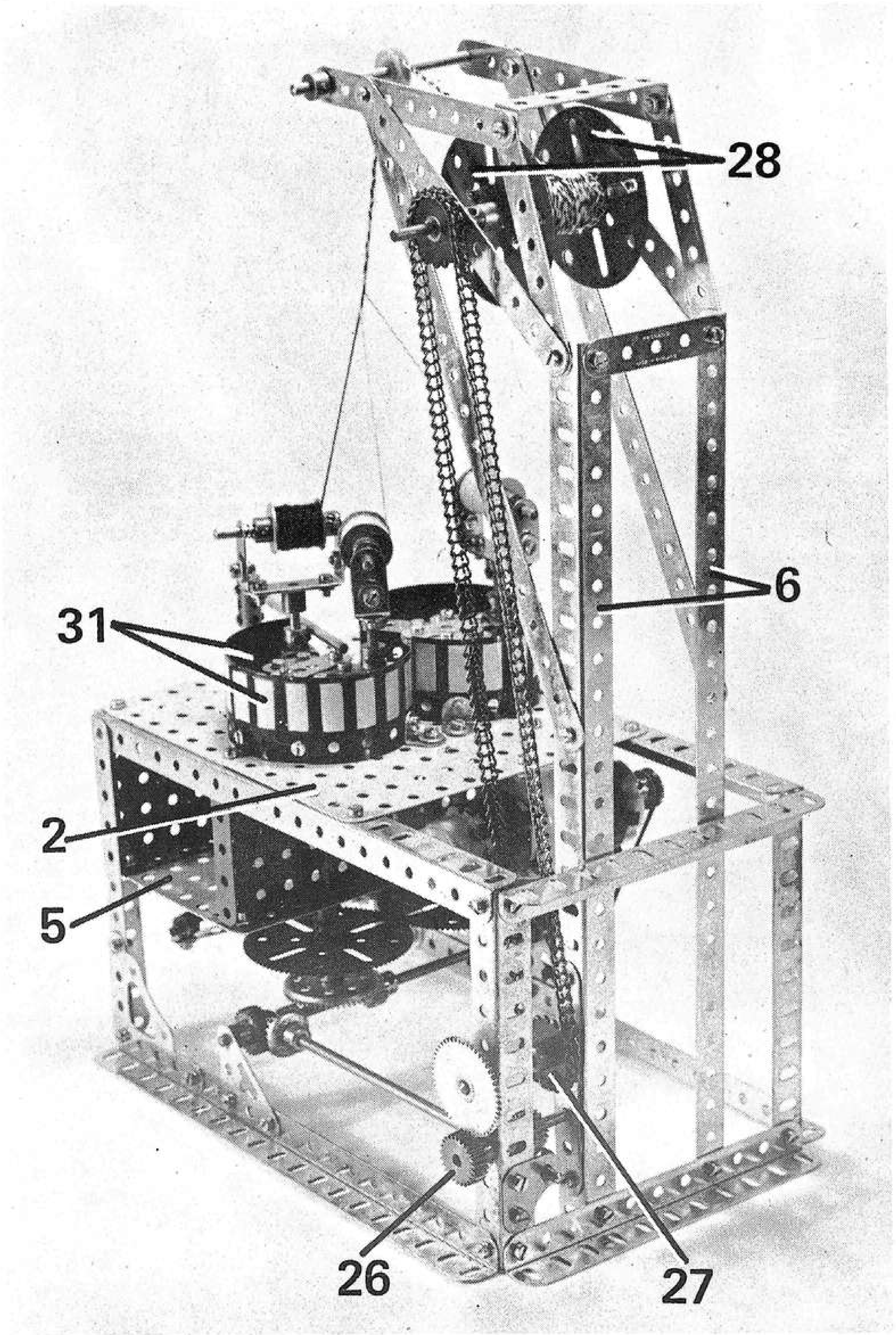
One of the three bobbin assemblies.





A rear view of the Plaiting Machine showing the drive to the cord take-up spool.

←

the plaited cord. The spool consists quite simply of two Face Plates 28, separated by a Sleeve Piece on Chimney Adaptors, fixed on a 4" Rod held by Collars in the centre holes of Strips 8. The cord is fed on to the spool over a ½" plastic Pulley on a 3½" Rod held by Collars in the end holes of Strips 9.

BOBBIN UNITS

Each of the three bobbin units consists of a Slide Piece 29 fixed on the lower end of a 1" Rod. Fixed on the upper end of the Rod is a Double Arm Crank, to which a 1½" x ½" Double Angle Strip 30 is bolted. The lugs of this Double Angle Strip are extended by Fishplates, ensuring that the circular holes in the Fishplates remain free to receive the bobbins. Each bobbin is supplied by two ¾" Washers held by Collars on a 2" Rod. with suitable thread being wound on the Rod between the Washers. Note that the Collars are so positioned on the Rod that a length of approximately ⅛" of Rod protrudes at one end, while approximately ½" of Rod protrudes at the other end. This ensures that the bobbin can be removed from the Fishplates, the side-play being taken up under operating conditions by a half of a Compression Spring carried on the longer end of the Rod between the appropriate Fishplate and Collar.

The bobbin units are mounted on their locating heads, two on one, and one on the other. Guards round the heads to prevent the bobbin units from slipping off are each built up from two Windmill Sails 31, overlapped three holes, curved to shape and attached to the top of Flat Plates 2 by a ½" x ½" and a 1" x ½" Angle Bracket in each case.

TIMING

When the model is operating, the bobbin units are transferred in sequence from one locating head to the other by means of Rod 19 which oscillates back and forth, and it is essential that the operation is correctly timed for the model to prove successful. Individual motions *must* be adjusted to ensure that, at the moment Rod 19 swings across to move a bobbin from one head to the other, the appropriate pair of 2" Strips 11 in each head are in line with each other. Some careful adjustment may be necessary here, but once the correct timing has been achieved and all Grub Screws tightly locked, the model should operate for substantial periods without giving any trouble. However, if the drive should be inadvertently reversed, then the whole sequence can be thrown out of phase, therefore it is most important to ensure that the model be driven *only* in the one direction indicated by the arrow marked on Pulley 20. Another point to watch out for, incidentally, is the tension on the bobbins. This should be sufficient to hold the bobbins in their mountings, but not so great as to prevent the bobbins revolving easily as the plaited cord is taken-up.

PARTS REQUIRED

2- 1a
2- 2
2- 2a
3- 3
1- 5
6- 6
2- 8
4- 8a
6- 9
6-10
2-12
2-12b
2-14
1-15
1-15a
3-15b
3-16
1-16b
3-17
3-18b
1-20a
2-23a
2-24
3-25
3-26
2-27
1-27a
2-27c
1-28
1-29
1-32
100-37b
100-37c
24-38
6-38d
3-48
1-48a
3-50
2-52
3-52a
16-59
4-61
3-62b
2-63
1-63d
24-69a
2- 77
1- 94
2- 96
2-108
2-109
6-111c
3-120b
2-133
1-133a
1-163
1-164
1-171
1-175
1-235b
1-518
16-561

1 6-Speed Motor

LIGHTS !
*
CAMERA !
*
ACTION !

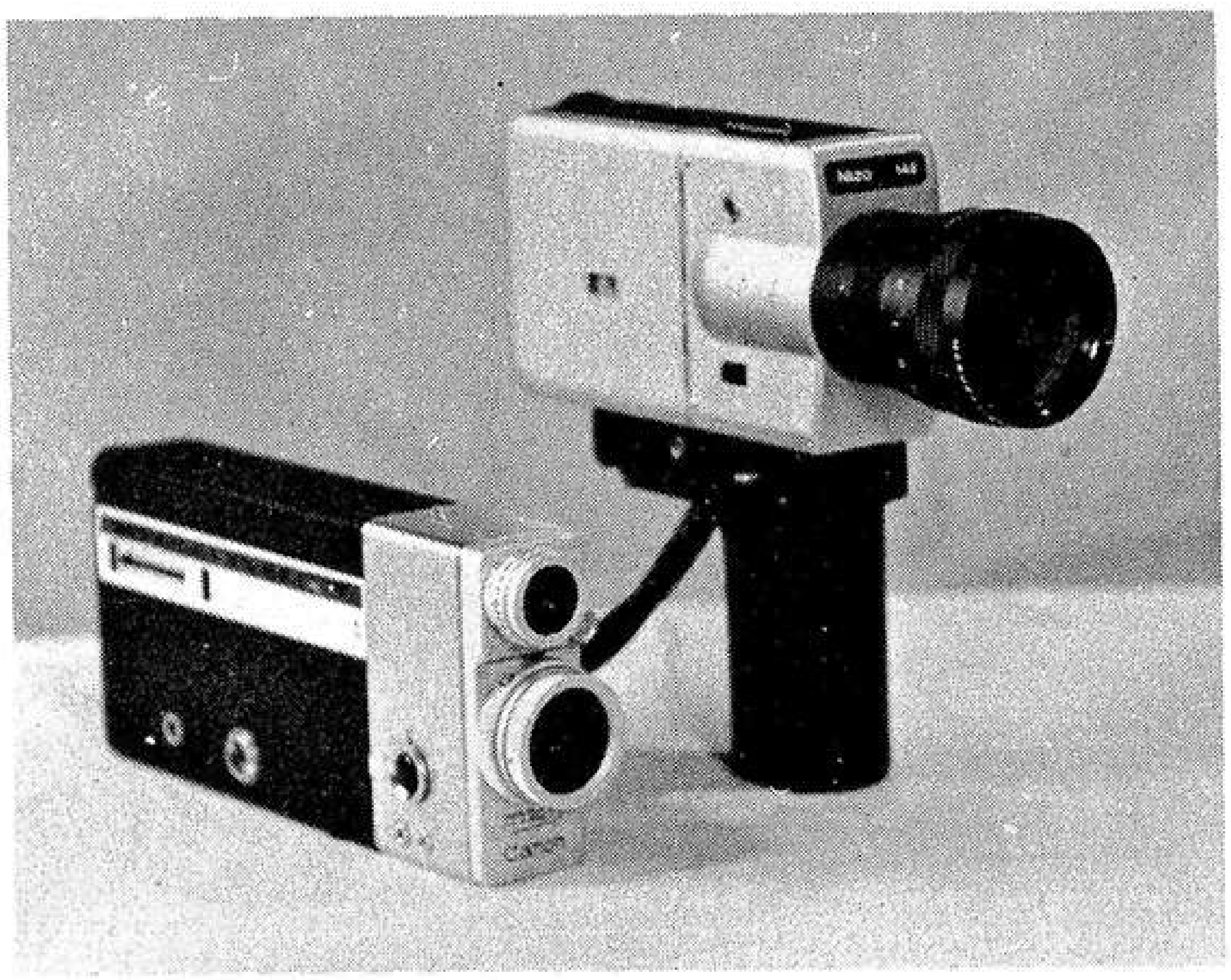


Fig.1. Two types of cine camera using different systems of automatic exposure control.

Part 3 of "LET YOUR MODELS LIVE" by Geoff Pratt

THERE IS a great deal of difference between filming your Meccano model and taking a series of still photographs of it. For one thing – and this is a very significant factor – a filmed model moves: it has life. Filming of Meccano models does not appear to be very commonplace, and so this series of articles is aimed at introducing to the modeller the possibilities that are opened up if you own a cine camera.

The still photographer uses film stock that is very large when compared with the cine photographer. Even if you use a 35mm camera, this is still enormous when compared with the tiny frame of the 8mm cine film, which only measures 3.5mm x 4.8mm, or 4.2mm x 5.8mm – depending on whether you are using Standard 8 or Super 8 respectively. The effect of having to use such a tiny picture is that film manufacturers have to use all their ingenuity in order to ensure that the size of the grain structure of their film is kept to a minimum. Otherwise, when the picture is projected onto a 4ft. wide screen the individual grains making up the image are magnified so much as to become visible to the naked eye. To achieve a 4ft. wide picture, the area of the image on that 8mm wide film has to be enlarged by 64,000 times! (Standard 8). For comparison, if a still photographer were to enlarge his negatives by the same amount, he would be producing prints 30ft. by 20ft! So naturally the demands on the emulsion of the cine film are extremely high and fineness of grain structure and a high degree of resolution of the image are of the highest importance.

This can only be achieved by using films of a considerably slower speed than are used for still photography. In other words, cine film is less sensitive to light than film for still cameras. The most commonly used cine film – Kodachrome, made by Kodak Ltd. – has a film speed of 25 ASA in daylight, whereas the same make of black-and-white Tri-X film has a speed of 400 ASA – some 16 times more sensitive to light.

I should explain at this point that a doubling of the ASA figure means double the sensitivity of the film to light, e.g. 50 ASA film is twice as sensitive as 25 ASA film. 100 ASA is 4 times and 200 ASA is 8 times as sensitive. This means that, as a cine photographer, you will need a great deal more light by which to work than does a still photographer. You have to use a film which is low in sensitivity and you do not have recourse to a flash gun. So you must ensure that there is sufficient light for correct exposure of the film. And that is what this article is all about – lighting and exposure.

EXPOSURE

First or all you must decide which film you are to use. You have a choice of several makes of film: Kodak, Agfa, Gevaert, Perutz, Prinz and so on, and the one you choose to use is a matter of personal preference, each film having its own characteristics for colour reproduction or rendering. Prices vary slightly, which may influence your choice to some extent. In the case of Super 8 film, the film speeds are standardised at 40 ASA in artificial light and 25 ASA in daylight. Standard 8 films will vary in speed somewhat from brand to brand.

Having decided on a type of film to use, there are then two factors which govern the correct amount of light falling on the film as it runs through the camera, namely, the *shutter speed* and the *lens aperture*. The shutter speed is the fraction of a second in which the film is exposed to light by the continuously rotating shutter within the camera itself. The standard running speed of a cine camera is 18 pictures per second, so the shutter speed will be likewise standardised due to the mechanics of the camera and will be about 1/40th sec. So in fact, the principal factor governing correct exposure of the film will be the lens aperture. A two-bladed iris is fitted within the camera and the setting of this iris is variable so as to allow more or less light to pass through the lens.

Here we encounter one of the peculiarities of photographic lore, which will hold no mysteries for those of you already initiated into the world of still photography, but may be a little baffling at first sight to the newcomer. The control for the aperture settings is marked on the camera in the following manner:– 22, 16, 11, 8, 5.6, 4, 2.8, 2, 1.4, 1. These numbers are sometimes preceeded by a letter "f" (eg. f22) which is why they are also called the *f*

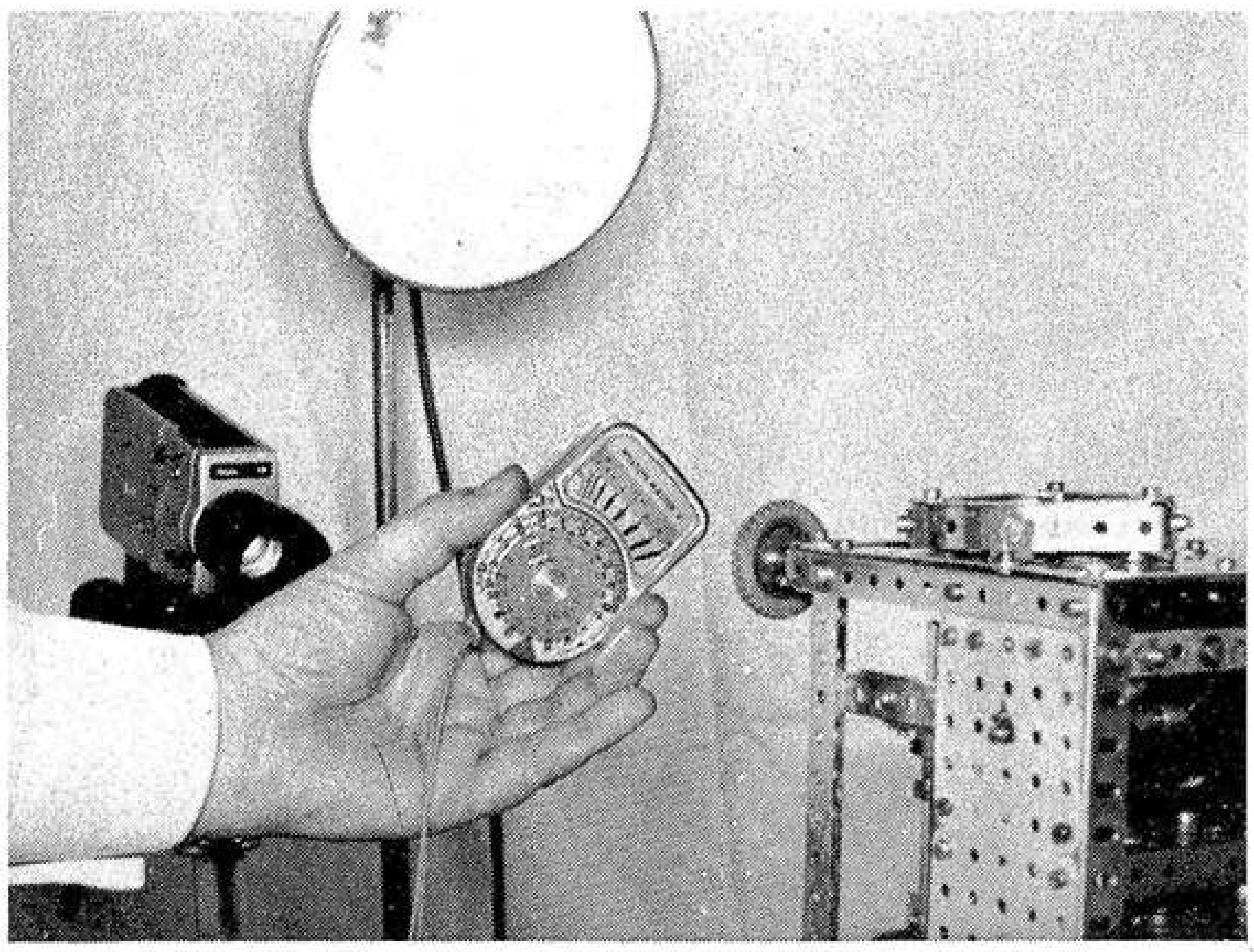


Fig.2. Using a separate exposure meter for calculating the correct exposure, showing the method of obtaining an "incident light reading".

numbers, or *stops.* The significance of these settings is that, as we start at f22 and progress up the scale towards f1, each step indicates that we are allowing twice as much light through the lens. f16 allows twice as much light through as f22, f4 allows twice as much through as f5.6, but 32 times as much as f22, and so on. So you can see that, as we vary our aperture setting between the two extreme ends of the scale, we have a very wide range of exposure control. Most lenses will have a range of aperture settings of from f22 to f1.8. For all practical purposes the f1.8 can be approximated to f2.

The question now arises: how do I determine which aperture setting (or stop) to use? If you are fortunate enough to own a camera with an automatic exposure control as in fig 1, this problem will be taken care of automatically by the camera. A photo-electric cell at the front of the camera measures the brightness of the light falling on the subject and regulates the aperture setting accordingly. All you have to do is to ensure that the film ASA speed has been set correctly. On the camera to the left in fig 1, this is done by rotating the ring around the photo-electric cell housing. More up-to-date cameras, such as that shown on the right in fig 1, measure the amount of light actually passing through the lens. This gives more reliable results, as the exposure is automatically computed for the precise area of the subject actually being filmed. More basic cameras will not have a built-in automatic exposure control and, if you own one of these, it will be necessary for you to determine the correct exposure yourself. An approximation to the correct exposure for various lighting conditions is usually given in the instruction leaflet enclosed with the film, but for the best results you will need to use an *exposure meter.* This is basically a photo-electric cell with a calculating disc built in. These can be purchased for as little as £5 from a photographic dealer.

For film work, a method of using the meter known as *incident light measurement* is best. When purchasing a meter, it is as well to check that it has this facility for incident light measurement. The meter illustrated in fig 2 is fitted with a special attachment on the back to enable an incident light reading to be obtained. The meter is held directly in front of the model being filmed and is pointed towards the camera. In this way the intensity of the light falling on the subject is measured, which is the most reliable method of exposure determination. The reading of the meter needle is then set on the calculator disc which is on the casing of the exposure meter. The correct f. number setting for the camera can then be read off alongside the shutter speed of 1/40th sec. The exact method of using the exposure meter will vary slightly from model to model, but will be described in detail in the instruction booklet supplied with the meter.

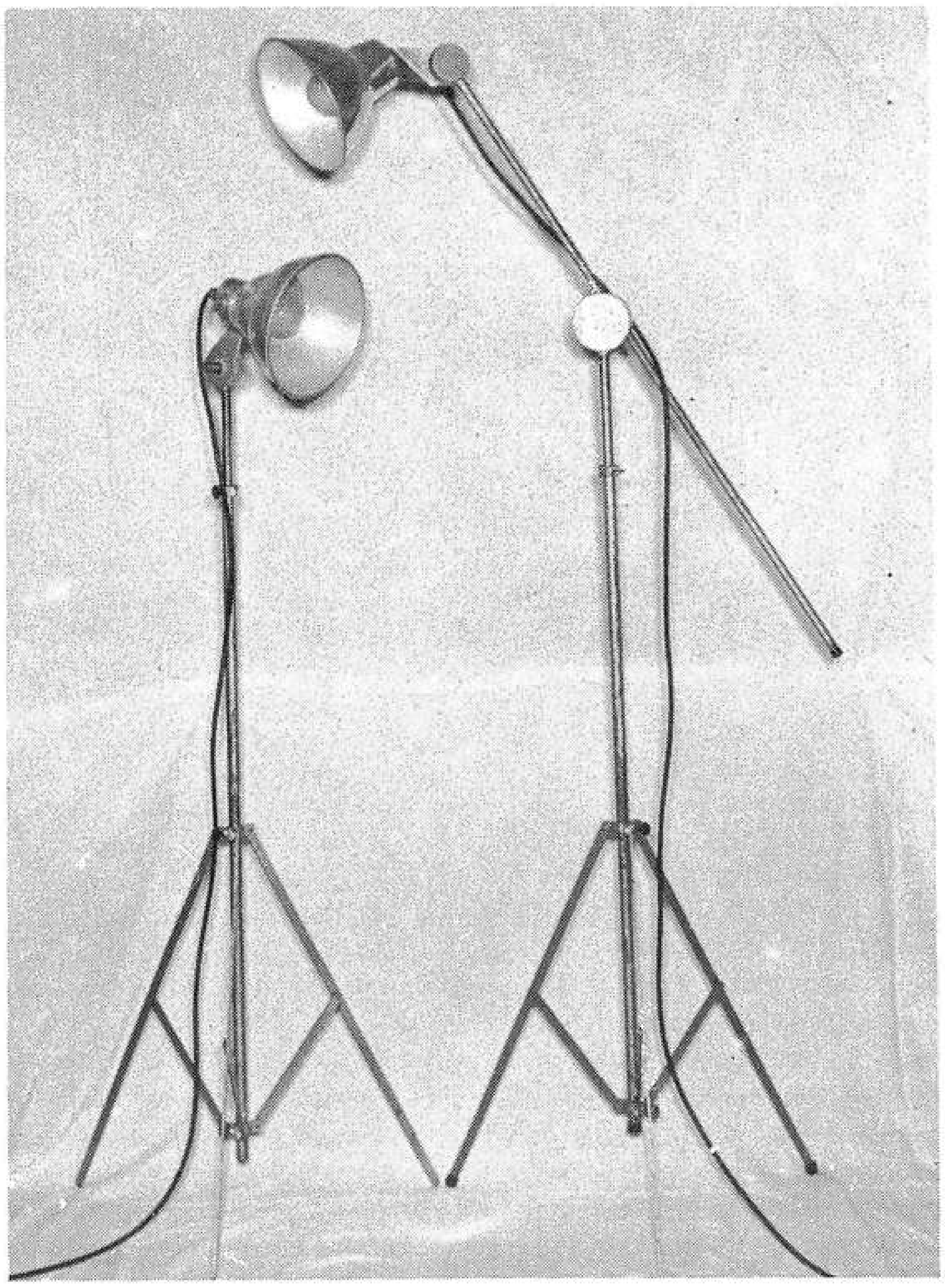
For the best results, the level of exposure should be correct although exactly what is "correct" is not easy to define. Good quality modern film materials will tolerate at least one stop over or under the "correct" exposure without serious loss of quality of the picture. Serious under-exposure will give a dark image on the screen which will not do justice to the brilliance of the projector lamp. Serious over-exposure yields a pale wishy-washy image that does not show the colours at their best.

As a starting point, use your film, camera and exposure meter and expose exactly as recommended in the instructions, and judge the results for yourself when the film returns from processing. If the results seem not to be at their best, then use a slightly different ASA film speed rating from the one recommended – higher to cure consistent over-exposure, and lower to cure consistent under-exposure. In the case of cameras having automatic exposure control, under or over-exposure can sometimes only be rectified by a camera repair mechanic, who is best contacted through the dealer from whom you bought the camera. Make sure you take along a sample of film for him to examine.

LIGHTING

Filming may of course be done out of doors in dry weather and indeed this is probably the best place for it. When out of doors you have plenty of elbow room without

Fig.3. Two types of lighting stand for Photoflood lamps, which are the cheapest source of film lighting.



upsetting normal domestic routines! Natural settings can often be arranged within the confines of the garden. Sand, stones, grass, foliage and concrete paths can be used to produce a setting which, although not as good as a proper scale scenic model, are nevertheless far more appropriate than a background of curtains and flowered wallpaper! Daylight costs nothing and there is usually enough of it for filming purposes.

Contrary to a popular belief, brilliant sunshine is not necessary for filming and can in fact yield disappointing results. Direct sunlight gives dense shadows. The resulting high contrast between light and shade does not show your model off at its best. If you have a choice, then a bright day without direct sun is best. Alternatively, on a sunny day film in the shade of a building – when you will get plenty of light from the open sky, but not direct sunlight. This avoidance of high-contrast lighting becomes doubly important if, in your film, you are trying to show the internal mechanisms of your model. In this case the light reaching the interior of the model must be of similar strength to that on the exterior, and this will *not* be achieved in direct sunlight.

Filming out-of-doors on a dull day can raise other problems. Due to the slow speed of the film you may find that you need an aperture setting of f4 or even f2.8. Without going into details at this stage as I shall cover this aspect in a future article, suffice it to say that focussing can become critical at these apertures. So either wait for brighter conditions, or, alternatively, film indoors with artificial lighting.

FILMING INDOORS

Artificial lighting is considerably different in colour from day-light and due allowance must be made for this difference when filming. There are two types of film stock – one made for daylight and one made for artificial light. Kodak film is named Kodachrome 25 and Kodachrome 40 respectively. It is most unwise to try to use daylight film in artificial light, but artificial light film may be used in daylight with the assistance of a suitable correction filter placed over the camera lens. The filter is reddish-brown in colour and is described as a Wratten 85 filter, or an A to D conversion filter. Super 8 cameras have this filter already built in, so Super 8 users do not need to buy a separate filter. To avoid the complications that would be involved with using two different film types, I would recommend you to *always use an artificial light type* film. When you want to film in daylight it is a simple enough matter to add on the conversion filter. In this way you are free to film in or out of doors with the same film. Artificial light film is more sensitive to light than daylight type film, and is usually rated at 40 ASA, so remember to adjust your exposure meter, or the film speed adjustment on the camera to suit. When the A to D correction filter is fitted for use in daylight, the film is then rated at 25 ASA – the standard rating for a daylight type film.

When we use artificial lighting for still photography, we can choose either flash or floodlighting. There is no such choice for the film maker, as no-one has as yet made a flash gun that fires 18 times a second! We cannot even use a prolonged time exposure to take advantage of existing room lighting, because we are hampered by the fixed shutter speed of 1/40th sec. So all we can do is to literally flood the subject with light from high intensity lamps. The amount of light that is actually required is perhaps not so surprising when we realise that we are trying to create conditions similar to daylight in brightness.

Photofloods are the cheapest source of lighting for filming. These are special lamps which fit into a normal bayonet light fitting, but are overrun so as to emit an extremely brilliant light. Their operational life is only 1 to 2 hours and they become extremely hot, so short spells of use are advisable with the lamps being switched off while setting up for filming to allow them to cool off. They should only be switched on when the camera is actually to be operated. The cost of the lamps is approximately 60p each and you will need at least two No.1 Photofloods. For filming at a range beyond 3 or 4 feet you will really need four lamps. The lampholders may be mounted in makeshift reflectors, but as they get so hot, only non-inflammable materials, such as sheet aluminium or tin, should be used and ventilation holes should be made to allow the free passage of hot air. Metal lampholders are advised and careful attention should be paid to ensure that reflectors and lampholders are properly earthed electrically. If you do not want to make up your own lighting units, proper reflectors mounted on lighting stands of various kinds are available from your photographic dealer. The type of lighting unit illustrated on the left of fig.3 is a simple stand with collapsible legs for ease of storage and an extending centre column. The unit on the right is a boomlight of similar style of construction, but with the addition of a boom. This is useful for placing a light directly over a model or for gaining extra height.

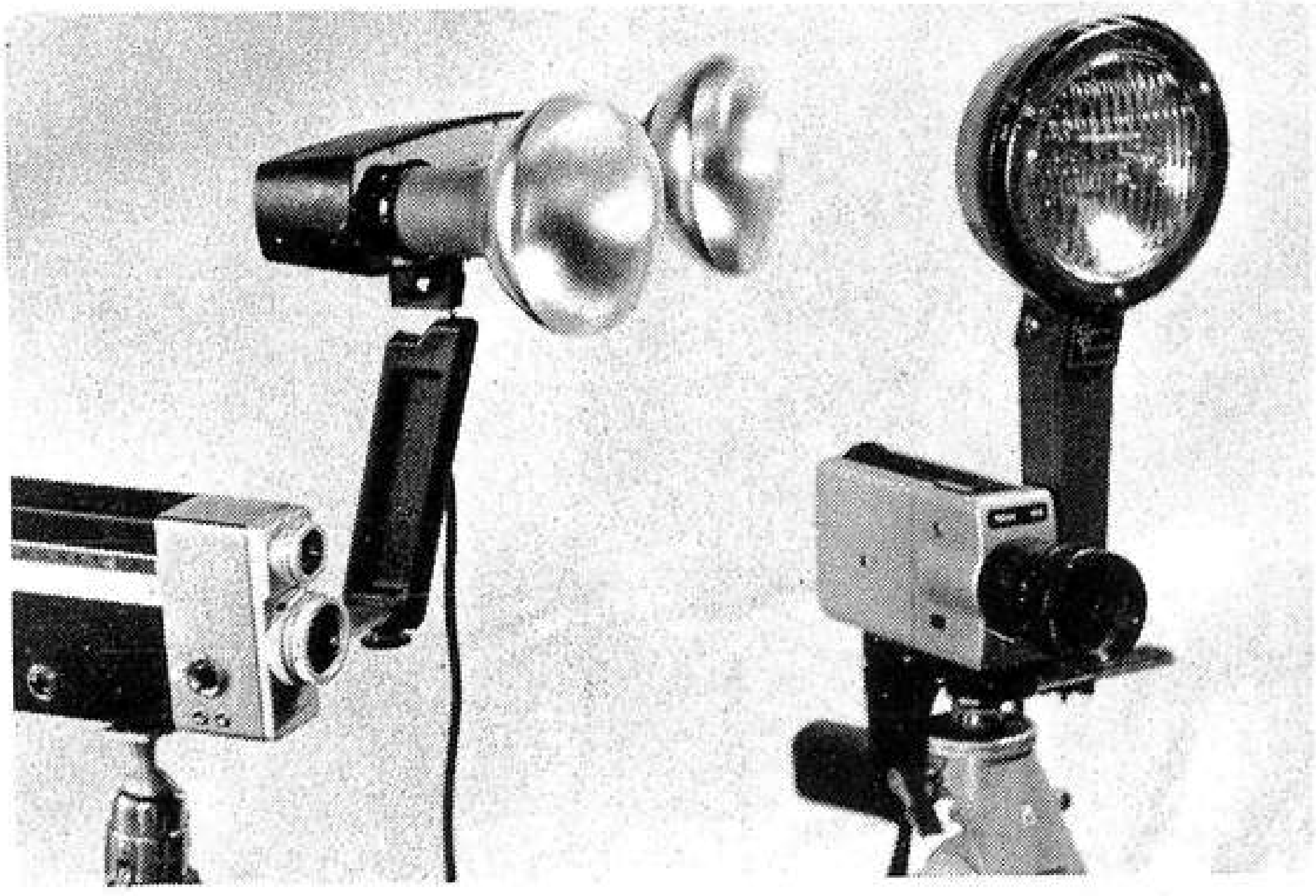


Fig.4. Two types of lighting unit for camera-attachment, using (left) overrun tungsten reflector lamps and (right) a tungsten-halogen lamp.

Floodlights can be obtained to fit on the camera itself and this is the simplest method of artificial lighting. To the left in fig.4 is a cine barlight using two 375 watt reflector lamps, and on the right is a camera mounted "sun gun" using a high intensity tungsten 1–1 halogen type of light source. Either of these may be tilted upwards to direct the light at the ceiling and reduce the harsh glare of direct lighting. Such a technique is known as *bounce lighting* and can only be used when the ceiling is white. If the ceiling is, say, pink the film will have a distrubing overall pink tinge when it is viewed. The ceiling becomes, in effect, a hugh reflector, directing light at the subject from all angles. This softens the shadows and reduces the lighting contrast.

The art of lighting a subject is wide-ranging and unfortunately cannot be dealt with comprehensively in an article of this nature. As a general guide, however, keep the light sources *above* the level of the camera lens to avoid unnatural "footlights" type shadows. Keep the lights fairly close to the camera position to avoid casting large dense shadows. You can always experiment with different lighting positions at a later stage when you have gained some experience with straightforward lighting set-ups such as I have just described.

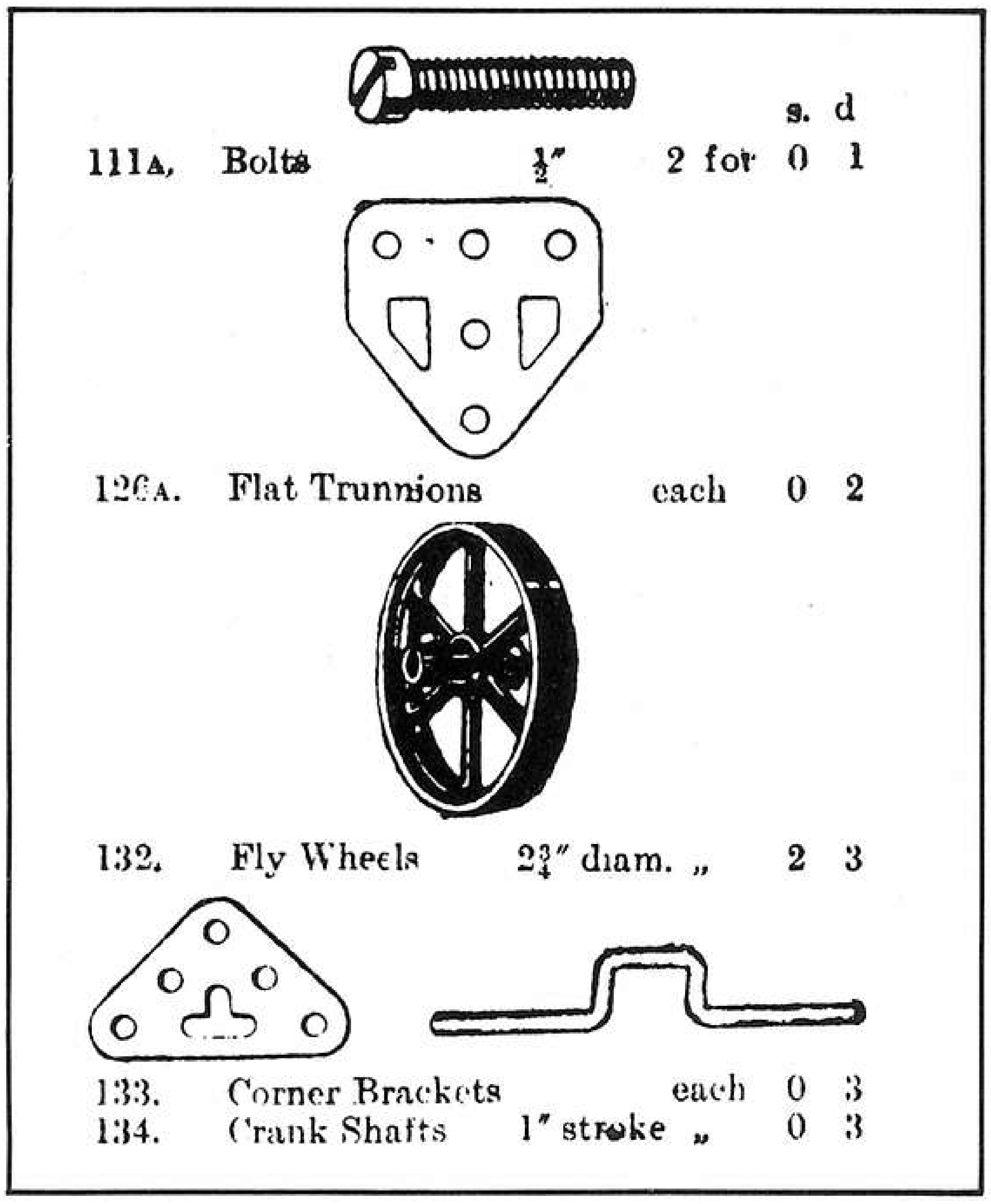
• •

COLLECTORS' CORNER

FLYWHEELS

BERT LOVE LOOKS AT MECCANO FLYWHEELS, INCLUDING AN EXCELLENT REPLICA PRODUCED BY MEMBERS OF THE TRANSVAAL MECCANO GUILD

Fig. 1, below, a reproduction of an advertisement which appeared on page 3 of Meccano Magazine No. 20 for September/October 1921, showing the original Meccano Flywheel, Part No. 132. As can be seen, the Flywheel sold for two shillings and three pence!



				s.	d
111A,	Bolts	½"	2 for	0	1
126A.	Flat Trunnions		each	0	2
132.	Fly Wheels	2¾" diam.	„	2	3
133.	Corner Brackets		each	0	3
134.	Crank Shafts	1" stroke	„	0	3

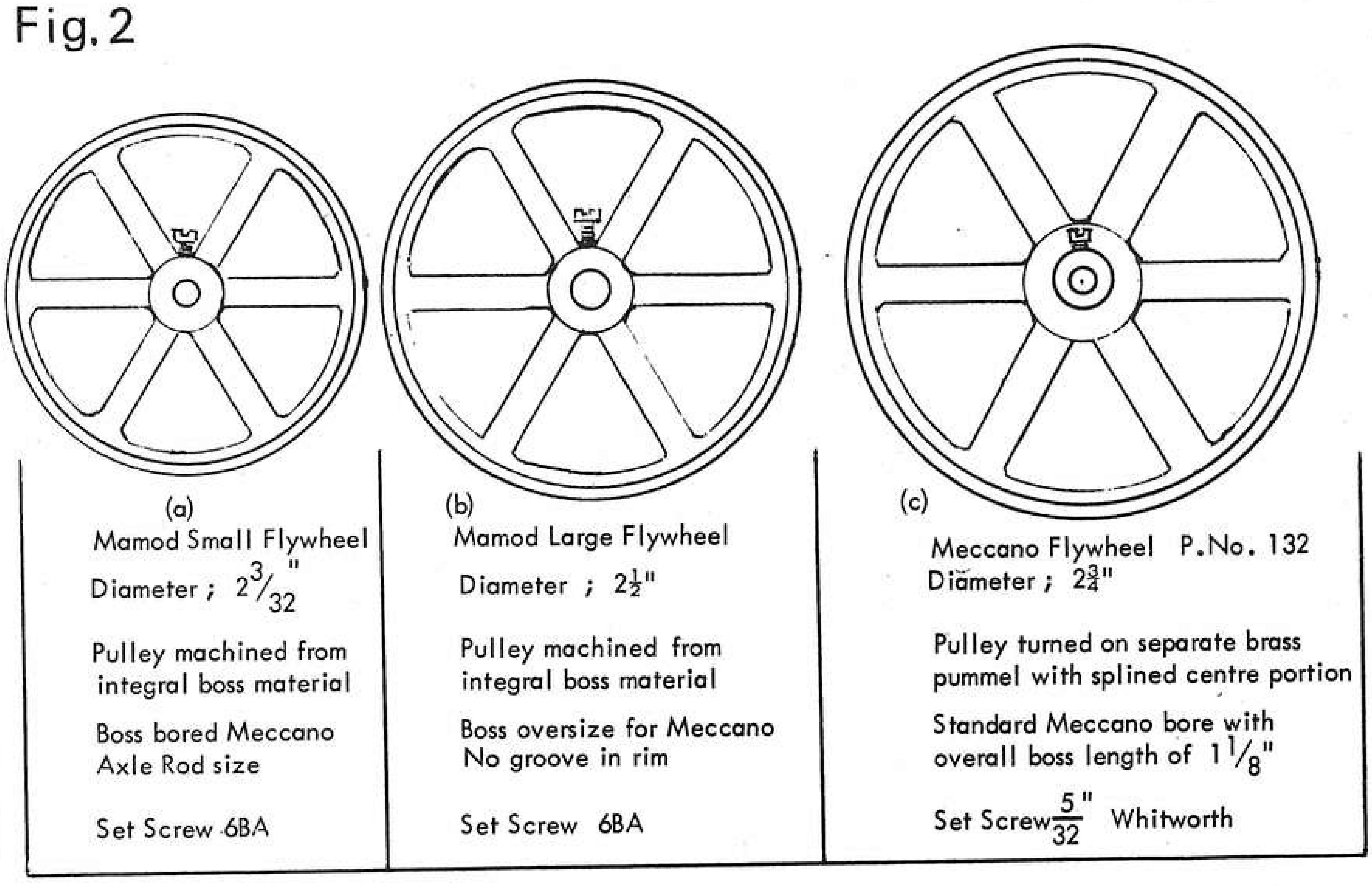
THANKS TO the efforts of genuine Meccano enthusiasts over the past five or six years, a whole range of hitherto obsolete Meccano parts have become available as replica parts made to original Liverpool specifications, and these have allowed modellers all over the world to reproduce many of the old and very popular Super Models of the 1925 – 35 decade. In each case it has been sheer enterprise on the part of overseas Meccanomen in most instances in getting hold of original designs and recruiting local and personal skill to get these rare items reproduced to the required standard.

The most recent replicas to appear on the scene are Meccano Part No.132 Flywheels which have been produced by the Transvaal Meccano Guild under the direction of Peter Matthews and a few devoted club members. A batch of three such replicas arrived at the author's home at Easter time this year and they are all illustrated in Fig.3. Three colours are available, namely the original black enamel, blue and red.

Fig.1 gives some idea of how long ago the original Meccano Flywheel arrived on the scene: it was announced with a whole range of other "New" Meccano parts in the Meccano Magazine for September/October 1921. Like all bossed wheels of the time, only one tapping was available for Set Screw fixing on the original design, but other than that, the design remained virtually unchanged until this part dropped out of production shortly after 1941, never to be re-instated by Binns Road. Both the original and the excellent replica parts illustrated here, are lovely pieces to handle and they certainly gave a real "engineering" touch to models of the period. There is a substantial 'weightiness' about the Meccano Flywheel hinting at an alloy with a high lead content to give weight and with other metals to increase the strength of the spokes. (Today, of course, the alloy chiefly used for die-cast toys is Mazak which is almost pure zinc with one or two other trace elements. Lead is not included, not

Fig. 2, right, a scale drawing of the genuine Meccano Flywheel (c) and two substitute flywheels (a & b) manufactured by Mamod. Although the Mamod Small Flywheel was compatible with the Meccano system, the Large Flywheel, as supplied, was incompatible owing to the large bore in its boss. However, a Rod Connector could be successfully utilised to bridge the gap.

Fig. 2


(a)
Mamod Small Flywheel
Diameter ; 2 3/32"
Pulley machined from integral boss material
Boss bored Meccano Axle Rod size
Set Screw 6BA
(b)
Mamod Large Flywheel
Diameter ; 2½"
Pulley machined from integral boss material
Boss oversize for Meccano
No groove in rim
Set Screw 6BA
(c)
Meccano Flywheel P.No. 132
Diameter ; 2¾"
Pulley turned on separate brass pummel with splined centre portion
Standard Meccano bore with overall boss length of 1 1/8"
Set Screw 5/32" Whitworth

only for reasons of toy safety, but also because, if it were, the lead and zinc would inter-react, causing the alloy to break down and crumble over a period of time).

The design of the Flywheel almost certainly stems from the flywheel of the original vertical Meccano Steam Engine of 1918-20 vintage; it is almost identical in general size and form. Dimensions and weight of the replicas are extraordinarily close to prototype, being within one gram of the 142g of the author's original Flywheel taken from his 1928 No.7 Meccano Set. As in the original, a splined pummel, or boss, is provided to original specifications, the splines assisting in getting a grip on the softer flywheel body alloy. This can be clearly seen in Fig.3.

As a stop-gap for modellers, the range of commercial flywheels used on Mamod steam engines and traction engines post-war were considered and it is interesting to compare two of the popular "substitutes" with the original. Scale drawing of these appear in Fig.2 where it is immediately obvious that, although similar in appearance, neither substitute had the same dimensions as the 132 and were both considerably lighter in weight. Neither of the Mamod wheels had a separate brass boss, the small pulley groove at the centre being cut into the soft alloy of the integral boss. The large Mamod Flywheel at 2½" diameter was not too bad a substitute, but it had the drawback of an oversize bore through its boss making it a sloppy fit on a Meccano Axle Rod. However, by first inserting a Meccano Rod Connector, quite a good fit on to a Standard Meccano Axle Rod was achieved. Although the smaller Mamod wheel had a groove for (Mamod) spring cord, cut round its rim, the larger Mamod wheel had a plain rim.

However, these shortcomings are a thing of the past now, as the Replica Flywheels are currently available. Readers who are interested in obtaining these may write directly to Peter Matthews of the Transvaal Meccano Guild or to M.W. Models in U.K. I am asked by the Transvaal Guild to let readers know that there has been an unavoidable delay in getting their replica Meccano Headlamps made, but they will keep enthusiast informed of progress through the various Meccano publications.

Fig. 3, right, specimens of three excellent replica Flywheels produced by the Transvaal Meccano Guild in Johannesburg, South Africa, and currently available from Peter Matthews. Note the true form of the prototype brass pummel removed from the centre sample.

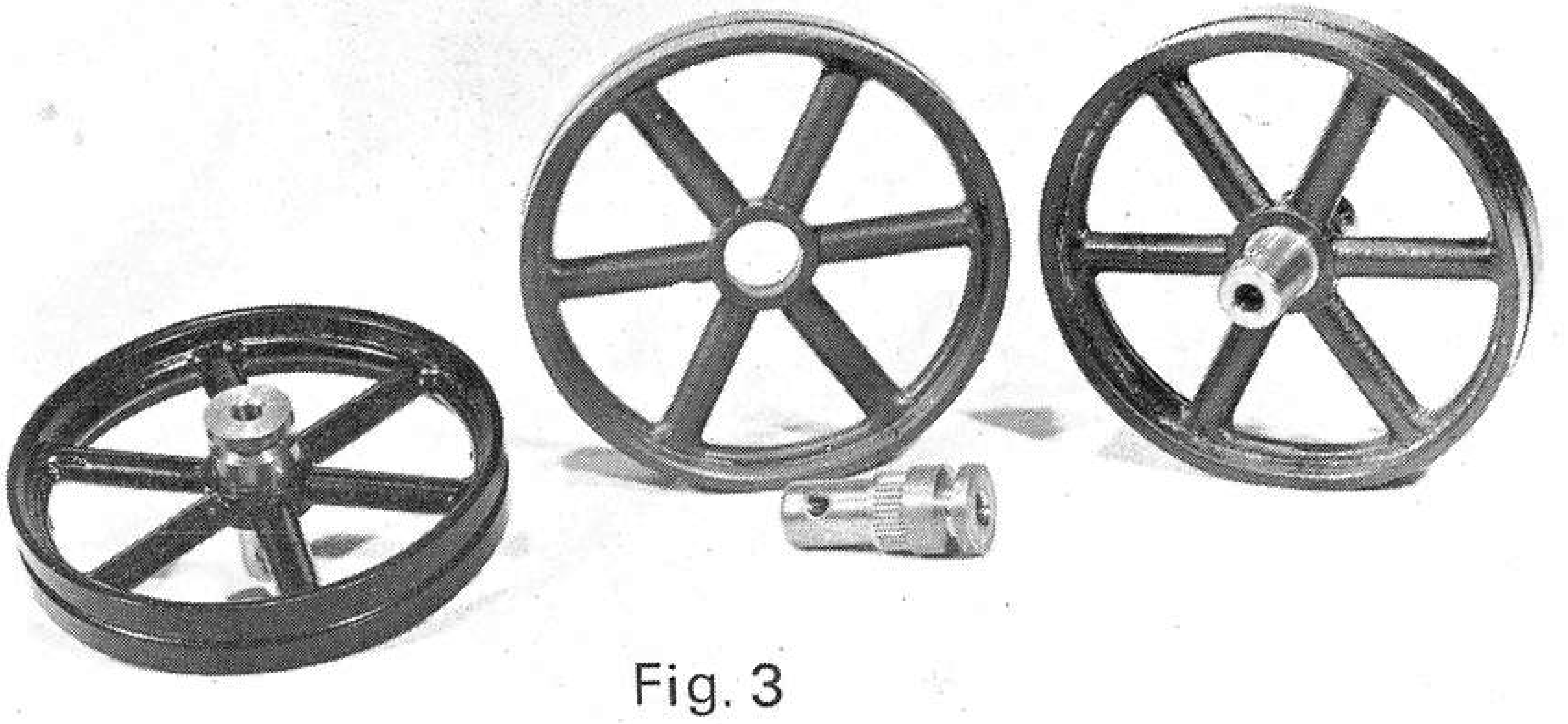
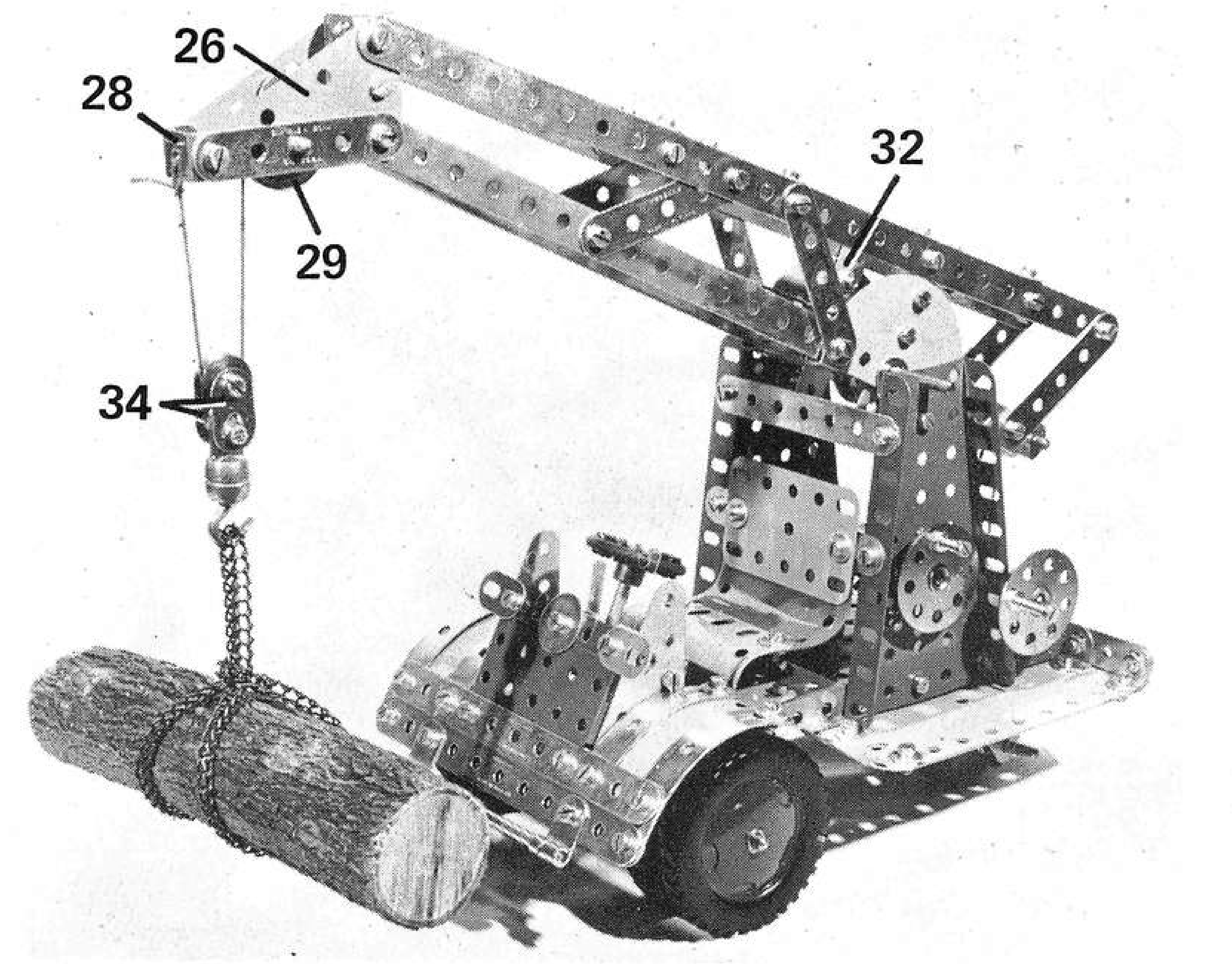


Fig. 3



In the last MMQ we featured a small Logging Winch & Sled as used by lumberjacks in the forest. Now we move to the timber yard with this

JUMBO CRANE

A No.5 Set Model

THE POPULARITY of Cranes as Meccano Modelling subjects is universally well-known – and here we have a beauty for No. 5 Set owners. Inspired by a mobile Timber Yard Jumbo Crane, it combines first-class proportions with working jib and hoist movements, plus positive steering with an excellent lock that gives a very small turning circle. The Crane is self-stabilising and will handle scale loads, and more, without tipping.

BASE AND BODY

The main base of the model is supplied by a 5½" x 2½" Flanged Plate 1 extended five holes forward by a pair of 5½" Strips 2, the inner securing Bolt in each case helping to fix a Flanged Sector Plate 3 to the centre of each flange of Plate 1. A second Bolt through the front base hole of each Sector Plate reinforces the fixture. Fixed beneath the forward end of the Flanged Plate is a 2½" Double Angle Strip, to which a 2½" x 1½" Flexible Plate 4 is bolted to serve as the footboard in the driver's cab. A second 2½" x ½" Double Angle Strip bolted between the fourth holes of Strips 2 supports the front edge of Plate 4, the securing Bolts also trapping the triangulated holes in a pair of Flat Trunnions 5, used as the front axle bearings. Use of the triangulated holes is necessary to give the correct height and position to the front axle. A third 2½" x ½" Double Angle Strip 6 is bolted between the forward corners of the Flat Trunnions, this being angled slightly to provide a journal for the steering column. The Bolts fixing this Double Angle Strip in place also help to secure two 2½" x 1½" Triangular Flexible Plates 7 in position to form the vertical sides of the engine compartment. The forward corners of these Plates are secured to the ends of Strips 1 by Bolts which also fix a fourth 2½" x ½" Double Angle Strip 8 between the Strips. This Double Angle Strip is angled, as shown, and it's lugs are each spaced from appropriate Strip 1 by a Washer.

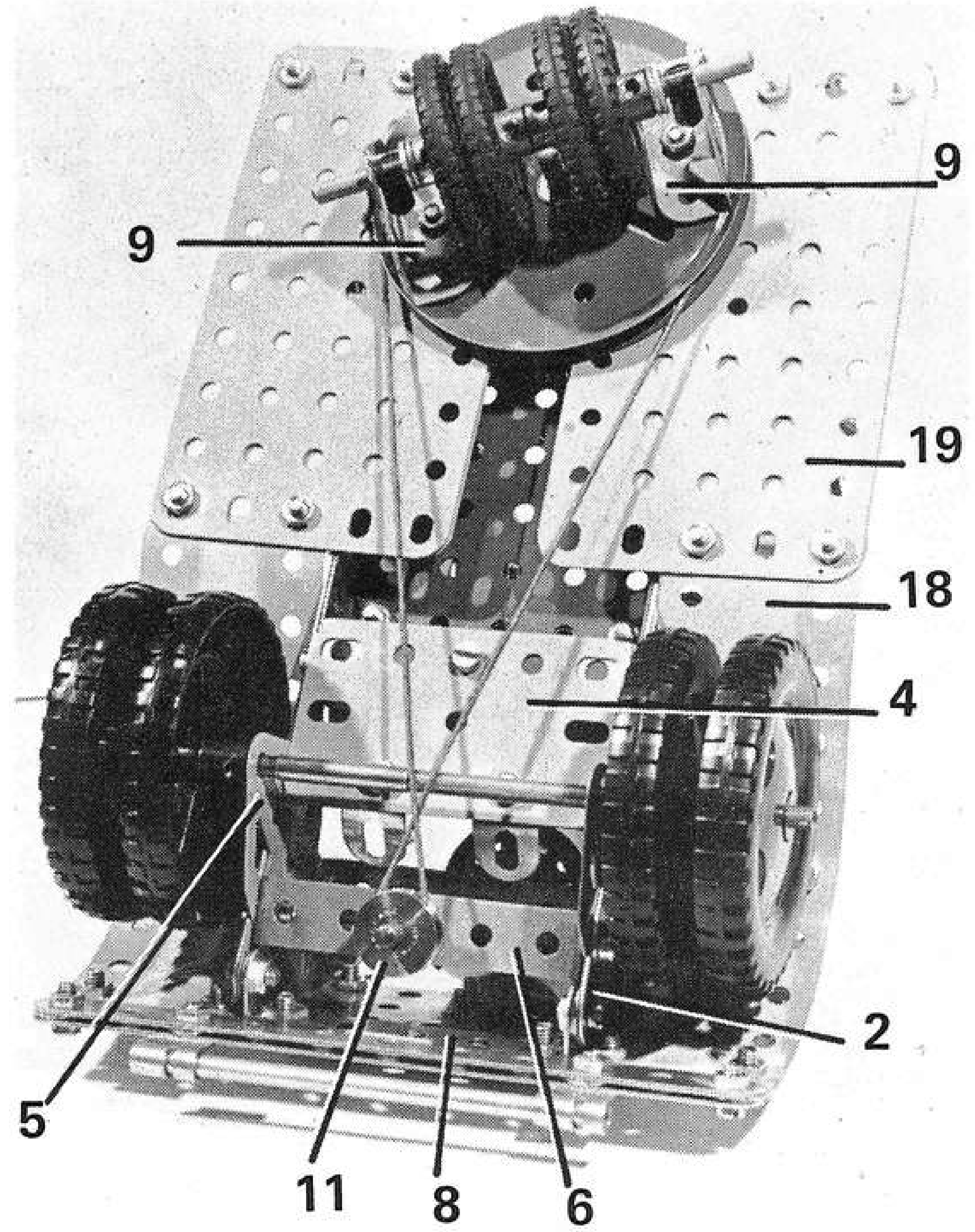
A compound front axle is supplied by one 3½" and one 2½" Rod joined by a Rod Connector, and twin 2½" Roadwheels are secured on the compound rod as shown. The rear wheels are supplied by four 1" Pulleys with motor tyres, mounted face-to-face in pairs on a 3½" Rod fitted with spacing Washers and held by Spring Clips in two Trunnions 9 bolted to a 3" Pulley. A 1½" Rod fixed in the boss of the Pulley passes, free, through the boss of a 2" Pulley bolted to the underside of Flanged Plate 1, being secured above the Flanged Plate by a Washer and Spring Clip. The boss of the 2" Pulley coincides with the third row centre hole of the Flanged Plate, and note that the rear securing Bolt fixes an Obtuse Angle Bracket 10 to the top of the Flanged Plate to later serve as an anchoring point for the jib luffing cord. The bosses of the 3" and 2" Pulleys bear against each other, this giving correct height and clearance.

The steering column, angled as shown, is supplied by a 3½" Rod journalled in Double Angle Strip 6 and in another Double Angle Strip bolted between the third holes in the rear edges of Triangular Flexible Plates 7. A ½" Pulley 11 is fixed on the lower end of the Rod, while the steering wheel is provided by a Multi-purpose Gear fitted with a Rubber Ring. Pulley 11 is connected to the 3" Pulley in the rear wheel assembly by a length of cord, crossed over to achieve correct steering. Although cord drive is used for the steering, it provides a very positive connection because the cord is kept in constant tension by the simple, but effective, method of inserting a 2½" Driving Band in the loop of cord and laying it, under tension, round the rear portion of the 3" Pulley rim.

Returning to Triangular Flexible Plates 7, a 2½" x 1½" Flanged Plate 12 is bolted, as shown, between the front edges of the Plates. The Flanged Plate is extended upwards by a 2½" x 2½" transparant Plastic Plate, serving as the windscreen, at the same time fixing in position a central ¾" Washer and two outer Fishplates, the latter representing wing mirrors.

The driver's seat is made from a "U"-section Curved Plate 13 bolted through the second row of holes in the top of Flanged Plate 1. The top of the Curved Plate is extended backwards by two overlapping 2½" x 2½" Plastic Plates which are curved gently upwards and are bolted, along with a 2½" x 1½" Flexible Plate 14, to a 3½" Strip bolted between the flanges of Sector Plates 3. A second 3½" Strip is bolted between the second holes of the Sector Plate flanges to provide additional bracing and also to provide a jib stop, or rest.

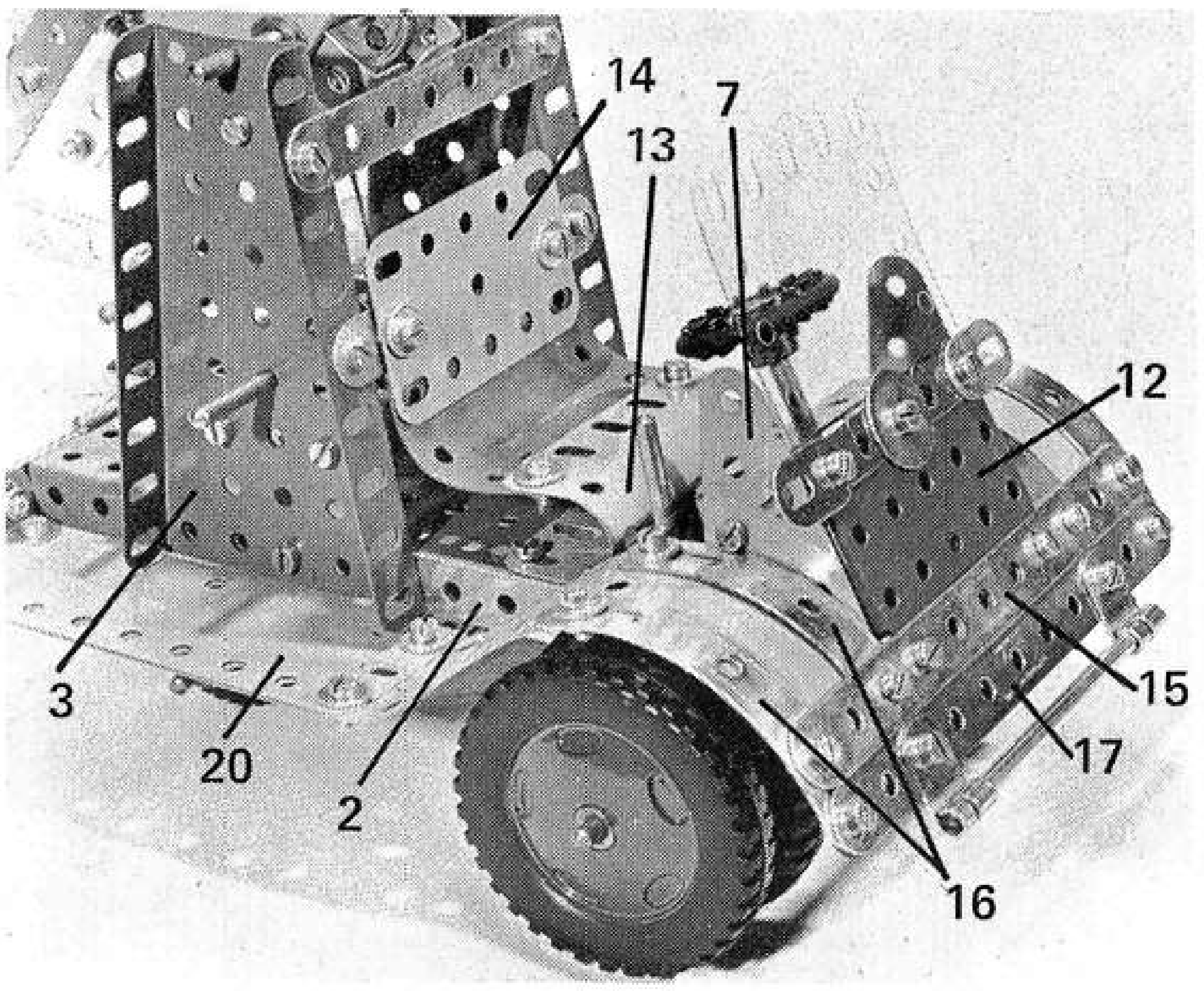
Opposite page, a general view of the finished Timber Yard Jumbo Crane described in this article. A working model of excellent proportions, it is built with the contents of a No.5 Meccano Set.



Right, an underside view of the Jumbo Crane showing the front axle assembly and the rear castor steering. Note the crossed-over steering cord.

Mudguards, running boards, crash bars and towing shackle may now be fitted. A 5½" Strip 15 is bolted to Double Angle Strip 8 to serve as the main support for the front mudguards, each supplied by a 5½" x 1½" Flexible Plate edged by two Formed Slotted Strips 16 suitably curved, with the inner Strip being trapped beneath the head of the Bolt fixing the upper Double Angle Strip between Plates 7. This prevents the mudguards from springing upwards. The lower front ends of the mudguard are sandwiched, between a pair of 5½" Strips 17, two of the securing Bolts also fixing two right-angled Rod and Strip Connectors in place. A 4" Rod is held in these Connectors to serve as a crash bar.

Each mudguard is extended rearwards by another 5½" x 1½" Flexible Plate 18, curved to shape and sandwiched between a 4½" x 2½" Flat Plate 19 and a 4½" x 2½" Flexible Plate 20, completely overlying the Flat Plate. The rear ends of the Plates are attached by Angle Brackets to three overlying 5½" Strips 21 bolted to the rear flange of Plate 1 to serve as a strong rear cross member.



A close-up view of the front of the model. Note that inner Formed Slotted Strips 16 are wedged under the heads of the Bolts fixing Triangular Flexible Plates 7 to the Double Angle Strip between them.

Note that a Double Bracket 22 is sandwiched between the centre of the Strips and the Flanged Plate to serve as a towing bracket.

JIB AND WINDING GEAR

Before assembling and fitting the jib, it is advisable to complete the winding gear. The hoisting winch is supplied by a 3½" Rod journalled in the fourth row centre hole of Sector Plates 3. Carried on the Rod, approximately a half-inch away from the left-hand Sector Plate is a Multi-purpose Gear 23 serving as one end plate of the winding drum. The other end plate is provided by a ¾" Washer held by a Spring Clip, with a standard Washer being added to prevent damage. The Rod must slide in it's bearings, it's movement being limited by the Multi-purpose Gear and by an 8-hole Bush Wheel 24 fixed on the left-hand end of the Rod. A 1" Bolt is held by lock-nuts in the face of this Bush Wheel to serve as a winding handle, the Bush Wheel being fixed approximately half-way along the Bolt. The protruding shank of the Bolt locates in appropriate holes in the Sector Plate to thus provide a brake for the winch.

The jib luffing control shaft is provided by a 4" Rod journalled in a 2½" x ½" Double Angle Strip 25 bolted to right-hand Sector Plate 3 and in a 2½" Strip bolted to the

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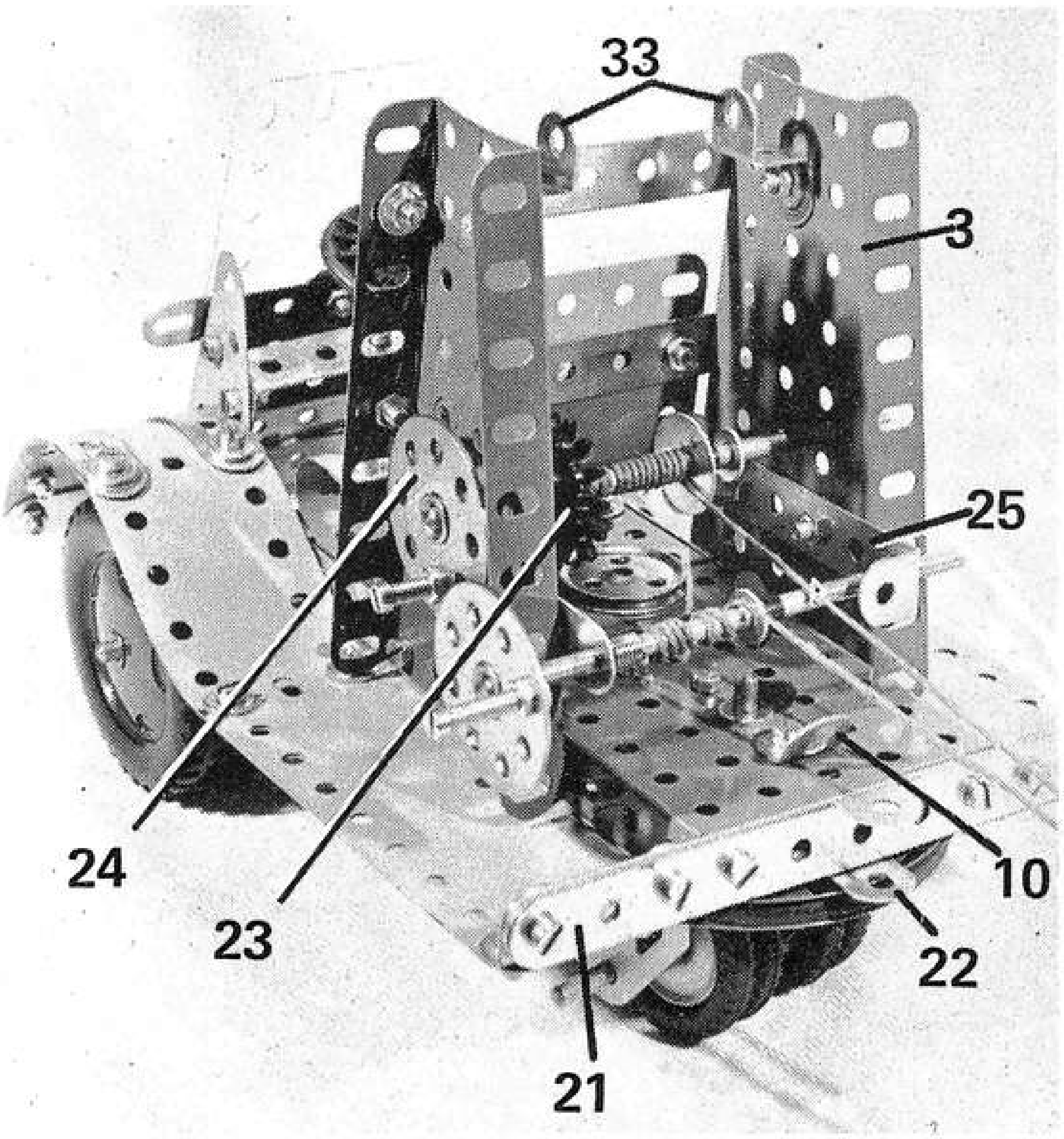


The body of the Jumbo Crane with the jib removed to show the hoisting and luffing winches. Both winch shafts must slide laterally in their bearings. (Ignore the 1" Pulley shown lying on the main Flanged Plate – this found its way in by mistake and was not spotted until after the photograph had been taken!).

←

left-hand Sector Plate. It is held in place by a Cord Anchoring Spring at one side and by a Spring Clip at the other, a second Spring Clip and a Washer serving as an end plate for the drum. An 8-hole Bush Wheel, fitted with a ¾" Bolt, is fixed on the left-hand end of the Rod to serve as a winding handle. Again, the Rod must slide in it's bearings, the outer Spring Clip being so positioned that, when the Rod is pushed inwards, the arms of the Spring Clip engage with the lug of Double Angle Strip 25 to act as an effective brake.

The jib itself is built up from four 12½" Strips, two at each side, braced as shown by 2½" Strips. A 2½" x 1½" Triangular Flexible Plate 26, overlayed by a 2½" Strip, is bolted to the end hole of the upper Strip at each side, but to the third hole of each lower Strip. The Bolts fixing the upper Strip to the Plate also fix a 1" x ½" Double Bracket 27 between the sides of the jib, while the forward corners of Plates 26 at each side are connected by a ½" x ½" Double Bracket 28. A 1" loose Pulley 29 is located inside the jib head on 1" Rod held by Spring Clips in the centre holes of the 2½" Strips overlying Plates 26.

Fixed between the lower 12½" Strips of the jib, through the second holes from the rear end, is a 1½" x ½" Double Angle Strip 30, it's lugs outside the Strips, the securing Bolts also fixing the rearmost 12½" bracing Strips, previously mentioned, in place. A second 1½" x ½" Double Angle Strip is also bolted between the lower 12½" Strips, this one through the ninth holes from the rear ends of the Strips and, again, each securing Bolt fixes one of the 5½" bracing Strips in place. In this instance, however, the Bolt also helps to fix a Semi-circular Plate 31 to each side of the jib, as shown. Each Semi-circular Plate is also attached to the nearby upper 12½" Strip by a 2½" Strip 32, the upper securing Bolt also fixing an Angle Bracket in position. Bolted to this Angle Bracket, and to other Angle Brackets fixed in suitable positions to the upper 12½" Strips, are four 2½" Curved Strips, as shown, these providing cross-bracing. Note that Strips 32 project downwards, passing the lower 12½" Strips of the jib, but they are not bolted to these Strips as the jib pivot – a 4" Rod – is mounted in these holes. The pivot is mounted in the top row centre holes of Flanged Sector Plates 3 and in the circular holes of two ½" Reversed Angle Brackets 33 bolted one to the inside of each Sector Plate. Note that located inside the jib head on a 1" Rod between the jib members to act as a guide pulley for the hoist cord.

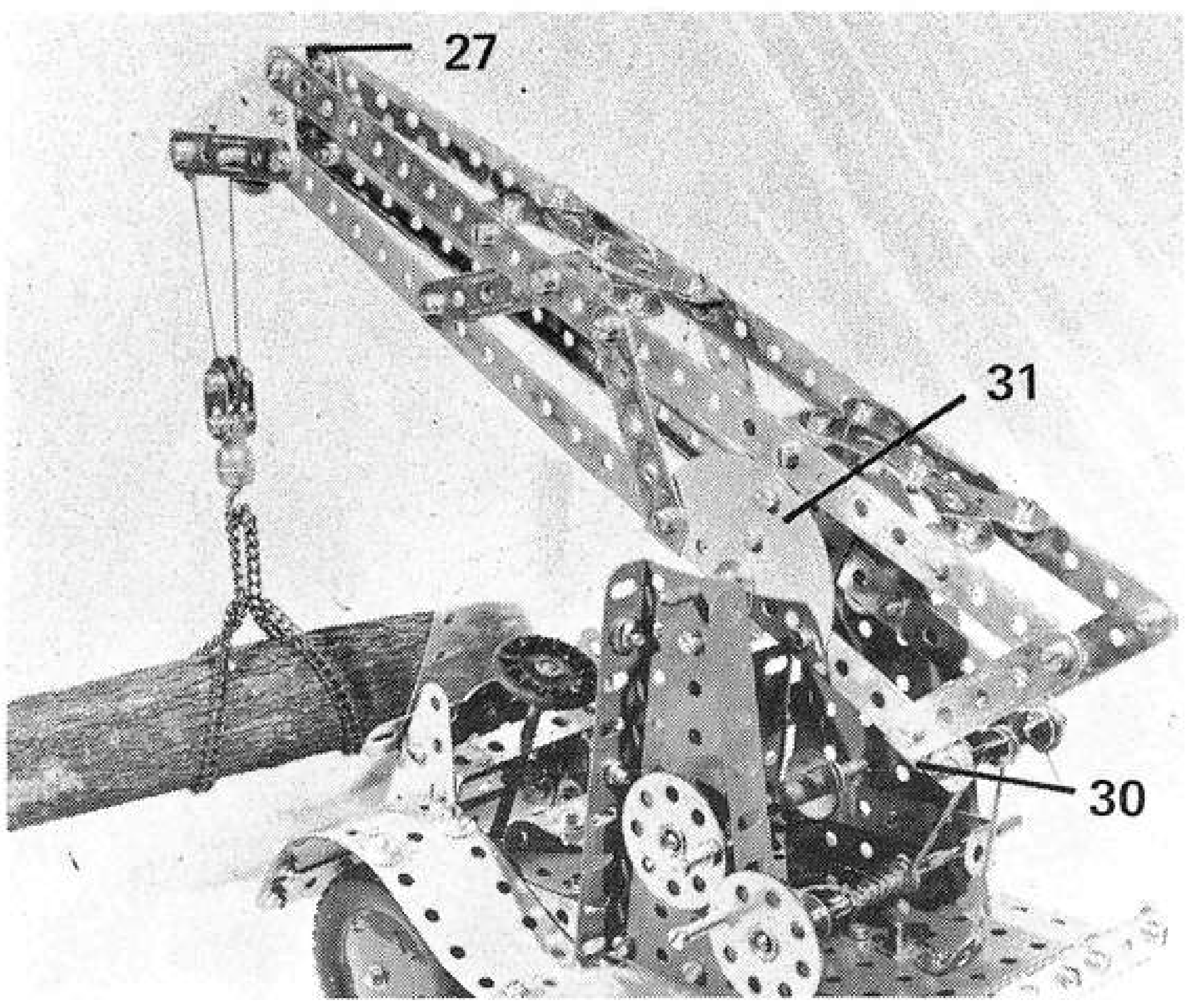
PULLEY BLOCK AND ROPEWORK

A simple pulley block is produced from two Fishplates 34, held by Nuts on two ½" Bolts, the upper Bolt carrying a free-running ½" Pulley and the lower Bolt carrying a Loaded Hook, a length of Cord is now tied to Double Bracket 28 in the jib head, is brought down and around the ½" Pulley in the block, then taken up and around Pulley 29. From there, it is passed along the jib and around the 1" Pulley on the jib pivot, to be finally wound round and attached to the hoisting winch which is controlled by Bush Wheel 24.

The jib luffing cord, attached to the Cord Anchoring Spring on the rear of the two winch Rods, is wound a few turns round the winch and is then taken up and passed over a 2" Rod held by Spring Clips in the rear end holes in the lower 12½" Strip of the jib. Mounted on the Rod to serve as a guide for the cord are two Washers held in position by two further Spring Clips. The cord is finally taken down and tied to Obtuse Angle Bracket 10 on Flanged Plate 1.

Finishing touches are added to the model by bolting Obtuse Angle Brackets to the footboard inside the cab to represent foot pedals, while the last 1½" Axle Rod in the set, mounted in a Rod and Strip connector, forms a brake lever for the driver.

As this model uses most of the parts in a No.5 Set, please use the Set contents list for the parts required.

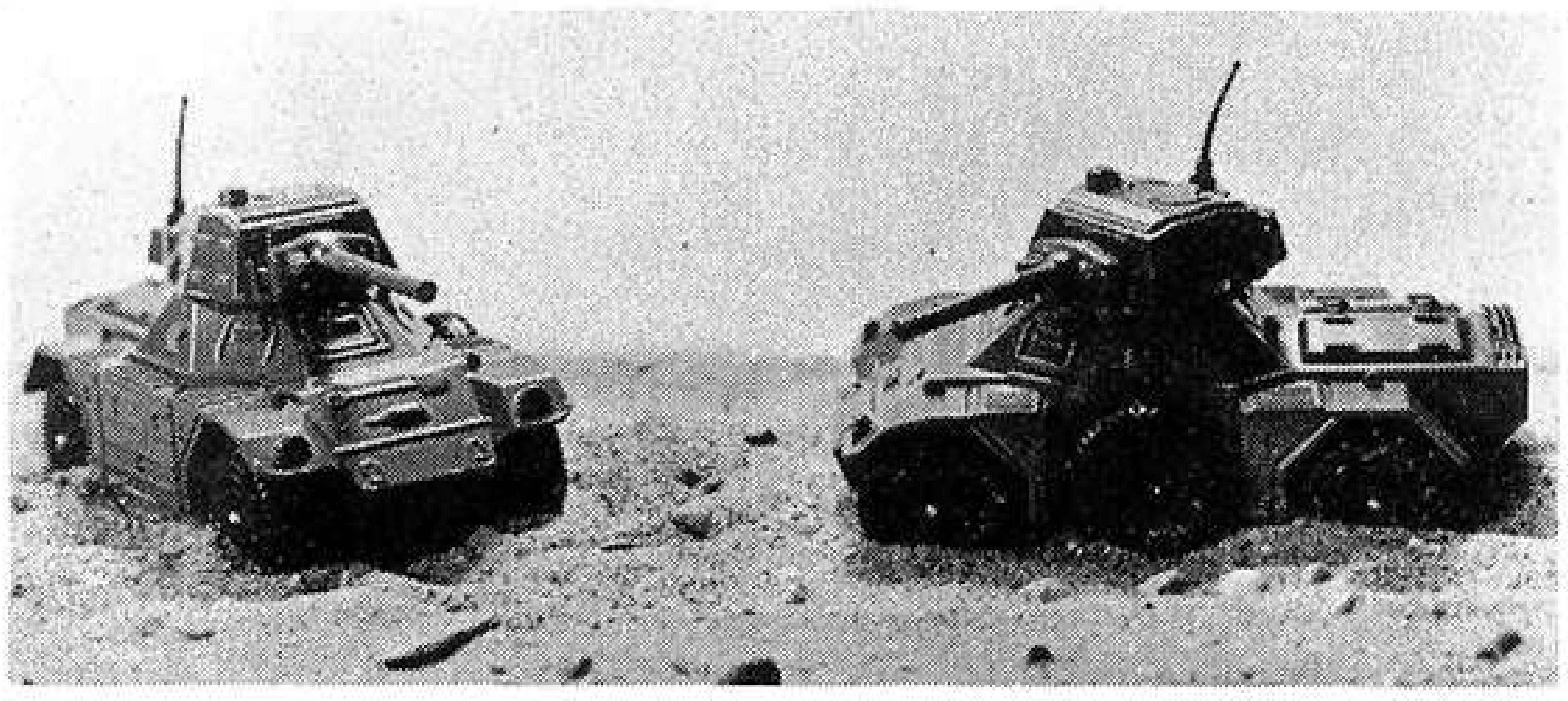


In this view of the Jumbo Crane construction of the jib is clearly shown. Note the top bracing which is supplied by 2½" Stepped Curved Strips bolted together in the centre and attached to the main jib members by Angle Brackets.

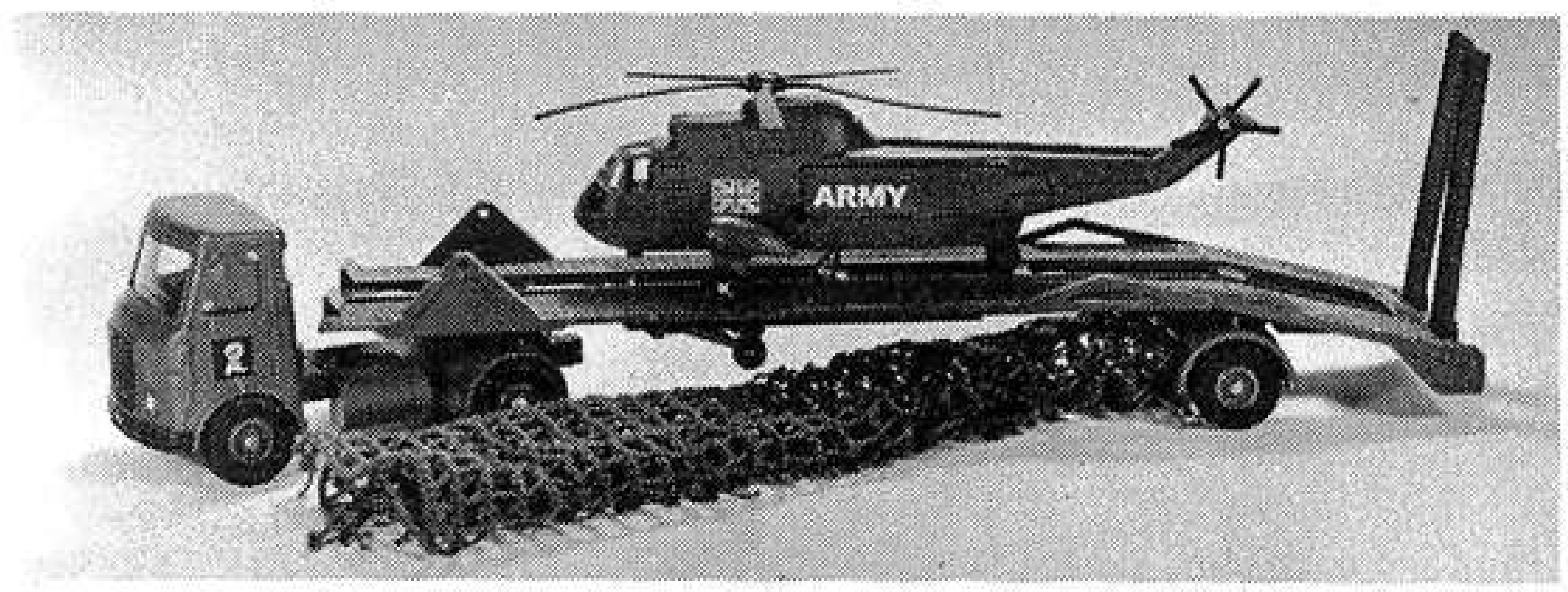
DINKY TOYS NEWS

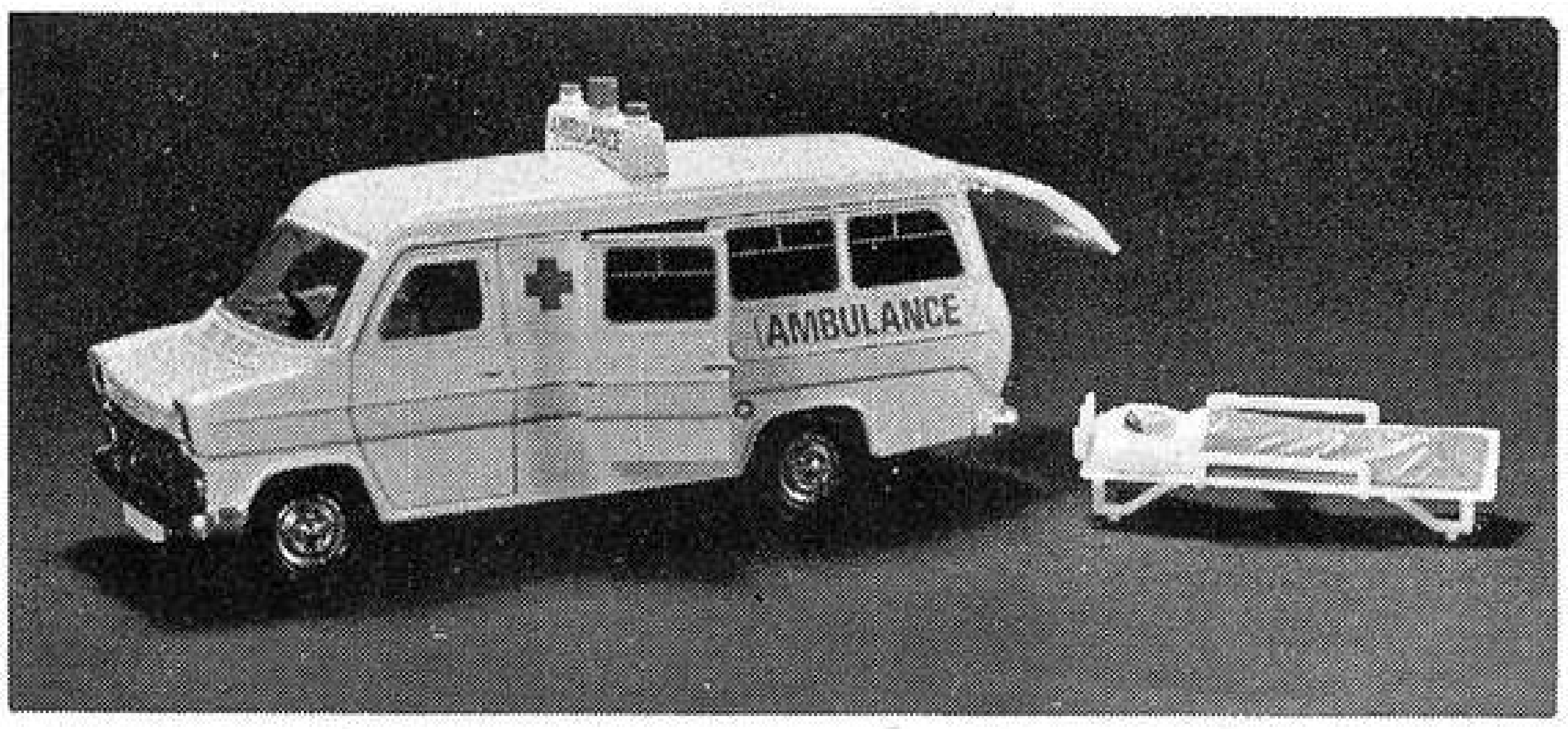
A look at the new Dinky Toy models released since the last issue of "Meccano Magazine Quarterly".

Below, No.667 Armoured Patrol Car. Although not based on a true-life original, this model is representative of the type of armoured patrol cars used extensively during World War 2. The model sports a wealth of realistic casting detail including outline representations of armoured panelling, hatches, lockers, grilles, etc. It also sports a gun turret which is rotatable through 360°, a removable spare wheel, a whip-type radio aerial and speedwheels. Measuring 79mm. in length, the model is finished in military olive green with a black aerial and wheels.

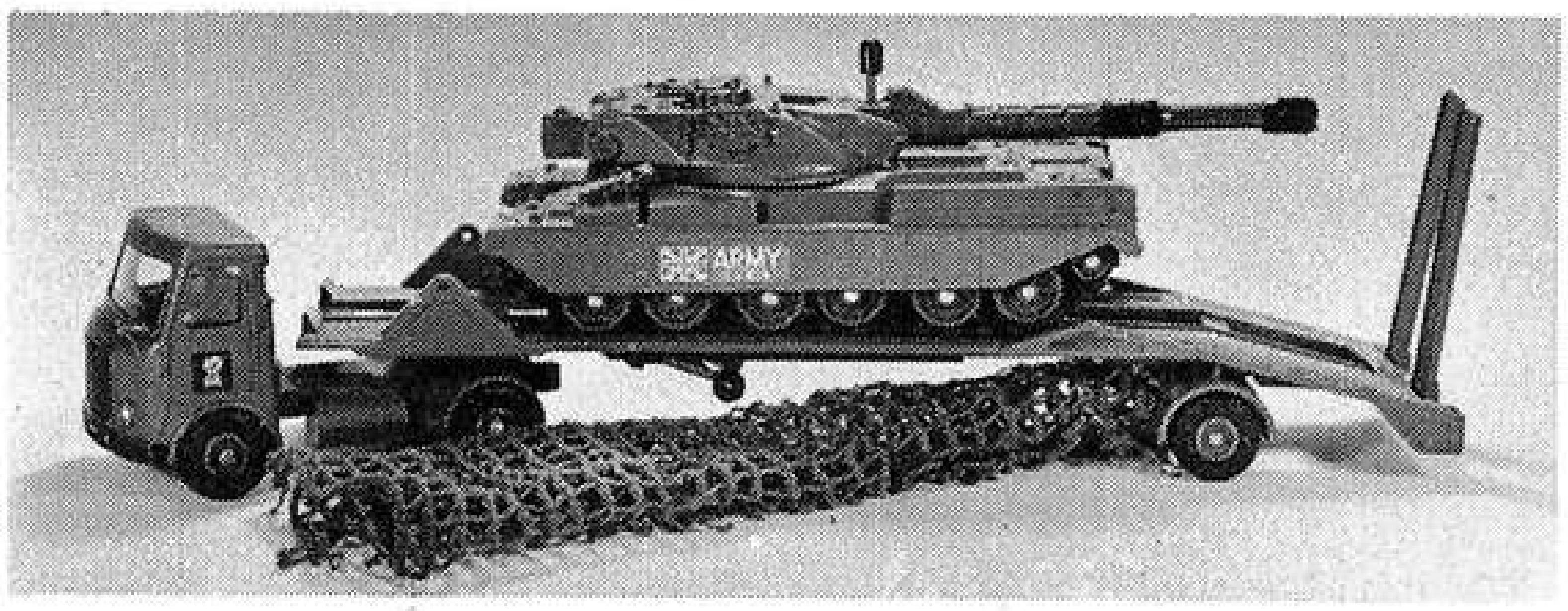


Below, No. 618 A.E.C. Articulated Transporter with Helicopter. The Transporter features a 6-wheeled articulated cab complete with a moulded interior, "glazed" windows and jewelled headlamps: the detachable 4-wheeled trailer unit has drop-down ramps and retractable bogie wheels. Overall length is 322mm. The Helicopter features a detailed interior moulding, "glazed" windows, an opening side door, rotatable rotors and lifting winch. Comes complete with a camouflage net.



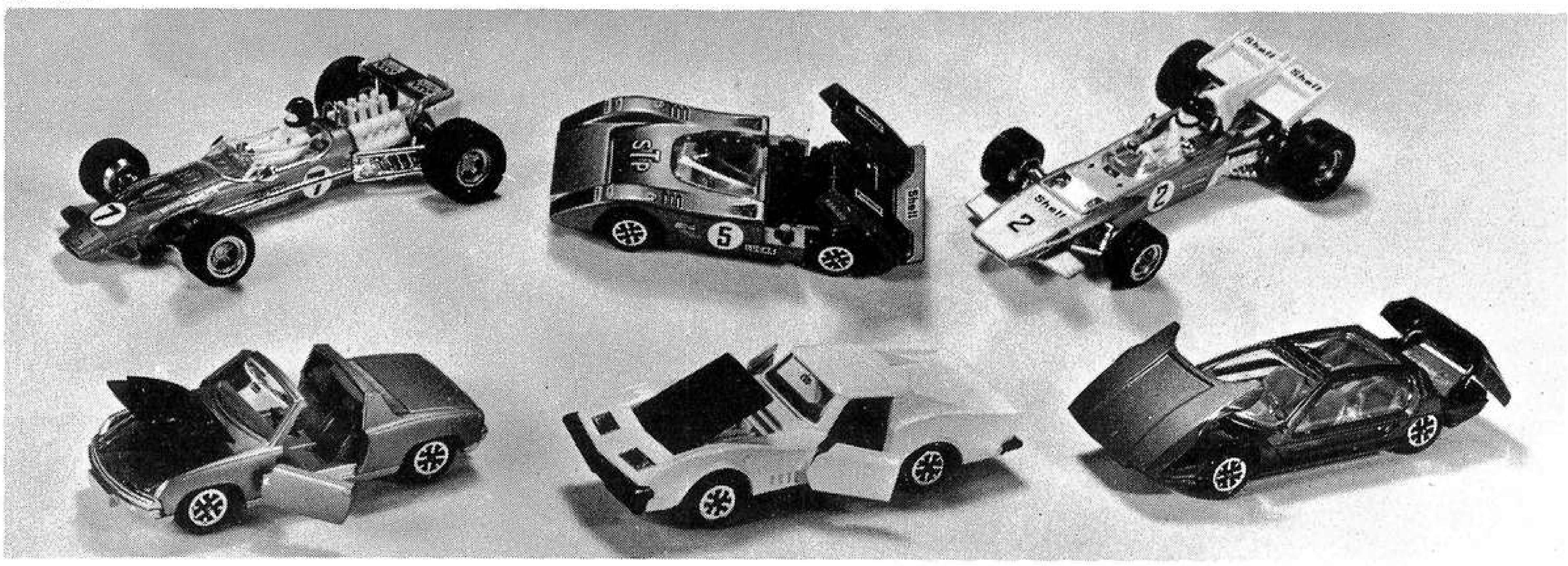


Above, No. 276 Ford Transit Ambulance, based on a typical Transit Van which has been converted to carry-out Ambulance duties. Built around a sturdy body casting, the model features a lifting tailgate, an opening side door, a detailed interior moulding, "glazed" windows, "working" suspension and a roof console which carries three simulated blue warning lights. Produced to 1/40th scale and measuring 129mm. in length, the model is finished in white with red interior. Supplied complete with a removable moulded stretcher/patient unit.



Above, No. 616 A.E.C. Articulated Transporter with Chieftain Tank. The Transporter included in this set offers the same exciting features as the Transporter supplied with the Helicopter Set. The Chieftain Tank, however, features a detailed casting, a rotatable gun turret, an elevating shell-firing gun barrel and crawler tracks. Produced to 1/50th scale and measuring 217mm. in length, the set also comes complete with a camouflage net.

Recently withdrawn, but now re-introduced as a result of strong popular demand, are these six action-packed racing/sports cars, newly-produced as a range of special budget-priced models. (All sell in the U.K. at between 75p and 90p). Finished in up-dated, more fashionable colour schemes including, of course, some metallic finishes, they are all packed in brand new, strikingly-coloured window-boxes. The models are, from left to right (top row), No.225 Lotus F.1., No.223 McLaren M8A Can-Am, No.226 Ferrari 312/B2; bottom row, No.208 V.W. Porsche, No.221 Corvette Stingray, No.189 Lamborghini Marzal.



Meccano Traction Engine

"Past Masters" 8

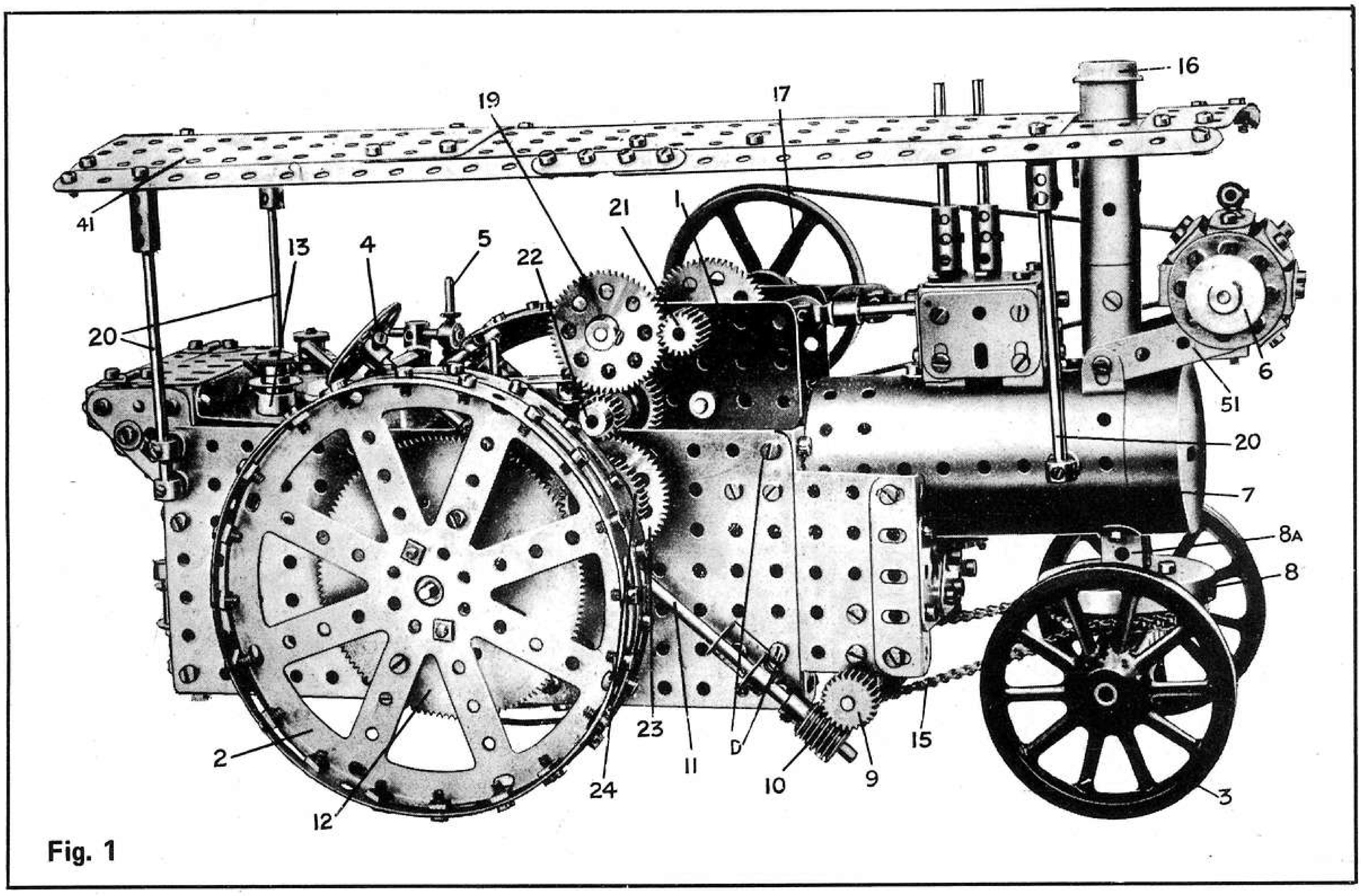


Fig. 1

MECCANO SUPER MODEL LEAFLET No. 22 'Meccano Traction Engine' featured one of the most popular pre-war compact super models and we have considered using it in our "Past Masters" series for some time. However, until recently it was not possible to obtain the obsolete Meccano Flywheel, Part No. 132, which is essential for the model, but, as reported in "Collectors Corner", excellent replica Flywheels produced to the original specifications are now available through the Transvaal Meccano Guild.

In the original Super Model Leaflet, it is true that an obsolete long-sideplate motor was used, but the current E15R Motor may be used as a replacement simply by bolting a 3" x 1½" Flat Plate to each sideplate to effect the necessary extension for the Traction Engine crankshaft and first-stage gearing. The original model could be built from the 1930 No.7 Meccano Set (top outfit of the day) with the addition of two or three small parts and, when complete, it would haul it's builder along on a carriage built from Meccano parts. There are certain anomalies in the design, such as an overscale width to the rear section and a solid back axle which makes steering difficult – plus the fact that an engine fitted with a dynamo was more commonly known as a 'Showman's Road Locomotive'. However, we are sure that those interested in the "Past Masters" series will forgive it's shortcomings! The original model carried a 4 volt accumulator, but the E15R may be operated by trailing leads from a mains transformer or from a 12 volt car battery mounted on a suitable trailer which the Traction Engine will have no difficulty in towing. With this in mind, the following building instructions are substantially taken from the original Super Model Leaflet, as also are the illustrations.

MAIN FRAME, COAL BUNKER, ETC.

Two 5½" x 3½" Flat Plates 62, overlapped four holes and bolted together, form each side of the main frame. The rear end is composed of two 2½" x 2½" Flat Plates overlapped four holes and bolted to Angle Girders secured to the Flat Plate 62. Two 5½" Angle Girders 64 are bolted to the lower edge of Plate 62, and are

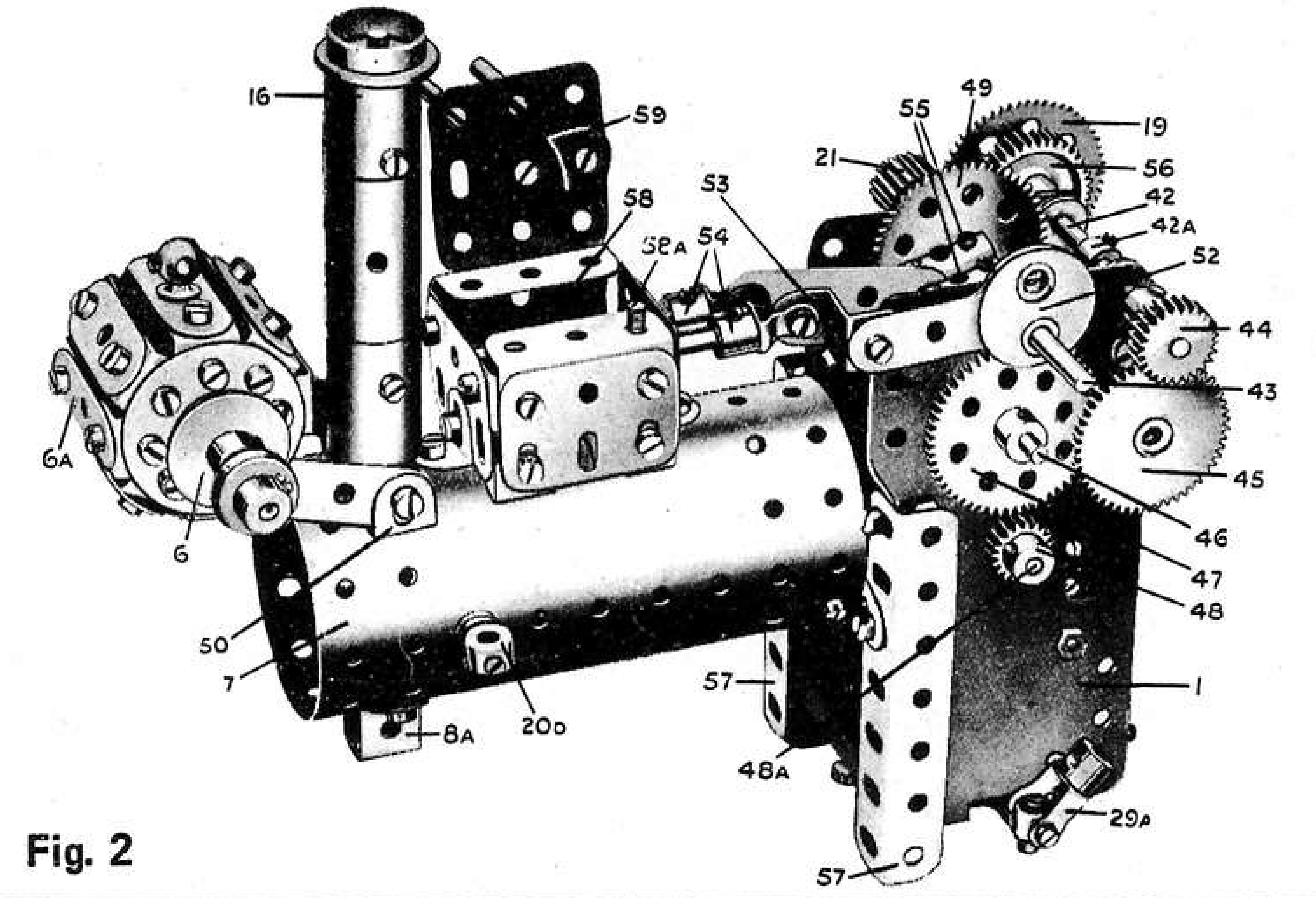


Fig. 2

Fig. 2, above, a view of the boiler and motor unit, showing the cylinder block, dynamo, etc.

spanned by two 3" Angle Girders 39. Two 5½" x 2½" Flat Plates are secured to Angle Girders 64, these Plates forming the floor of the body (and also supporting the accumulator in the original model).

Two 2½" x 2½" Flat Plates 63 bolted to the front ends of Plate 62 carry two 2½" Angle Girders to which are bolted Corner Brackets 65 connected in the centre by a 1" Triangular Plate 66 that carries an Angle Bracket 66a. The construction of the tool box 70 should be quite clear from the illustrations.

A 6½" Rod 31 is journalled in side Plates 62 and in 1½" Pulley Wheels 37 which are secured to the inside faces of the Plates to reinforce the bearings of the Rod. This Rod forms the axle for the rear road wheels and is held in position by Collars placed against the bushes of the Pulley Wheels. The brake drum 30 is a 3" Pulley secured to Rod 31, which also carries (on the opposite end) a 3½" Gear Wheel 12, placed so as to engage a 1" Gear Wheel 24, the latter carried on a 2" Rod journalled in one side Plate only of the frame and in another 1½" Pulley 38 bolted to the Plate. The 2" Rod is held in position by a 57-teeth Gear Wheel 23 which engages a ½" Pinion included in the Motor output gearing. Gear 23 is spaced from the frame Plate 62 by it's boss and several Washers so as to give clearance for the steering column 11.

SCREW OPERATED BRAKE.

A Threaded Pin 5 is secured in a Collar in a 1½" Rod and the latter is passed through the end of a Coupling in which is carried a 3½" Screwed Rod 5a journalled in two Double Brackets bolted to the frame Plates as shown. The Screwed Rod carries a Threaded Boss which, it is important to note, must be free to move up and down on the Rod. The brake cord is attached to a bolt on the frame, and then passed round the brake drum 30 and secured to the Threaded Boss on Screwed Rod 5a.

BOILER AND MOTOR UNIT

Two 3½" Angle Girders 57, bolted to the sideplates of the Electric Motor, form the supports by which the completed unit is later secured to the rear portion of the model. A Boiler 7, fitted with a Boiler End at the front only, is bolted to Girders 57, the Boiler carrying on it's upper surface the cylinder block 58 which is built up from six 1½" Flat Girders, eight ½" Angle Brackets, two 1½" Angle Girders and two 1½" x ½" Double Angle Strips. The sides of the block are connected to the back and front cylinder covers by Angle Brackets, while the top, consisting of two 1½" Flat Girders, is attached to the sides by means of the 1½" Angle Girders. The entire block is secured to the Boiler top by means of two 1½" Double Angle Strips bolted to the bottom edges of the side Flat Girders and also by two Angle Brackets.

The top of the cylinder block carries on the inside an Angle Bracket 59, in the hole of which one of the 2" Rods 54 is journalled. This Rod represents the Piston Rod and carries an End Bearing to which one end of the 2" Strip is attached pivotally by a nut and bolt. The other end of the Strip is pivotted on the pin of the crankshaft 43.

CRANKSHAFT AND MOTION

The crankshaft actually consists of two 2" Rods 43, to which two Couplings 55 are secured at right angles. The Couplings should be fixed very securely on their respective Rods by two Grub Screws in each case. A single ¾" Bolt is passed through the forward end transverse holes of the Couplings to form the crank pin, then the crankshaft is journalled in the Motor sideplates in the centre of the top row of holes. The valve rod is formed by another 2" Rod 54 journalled in the end cylinder cover and also in an Angle Bracket fixed by a Bolt 58a to one of the 1½" Angle Girders of the cylinder block 58. This Rod carries an End Bearing that is rigidly attached by a nut and bolt

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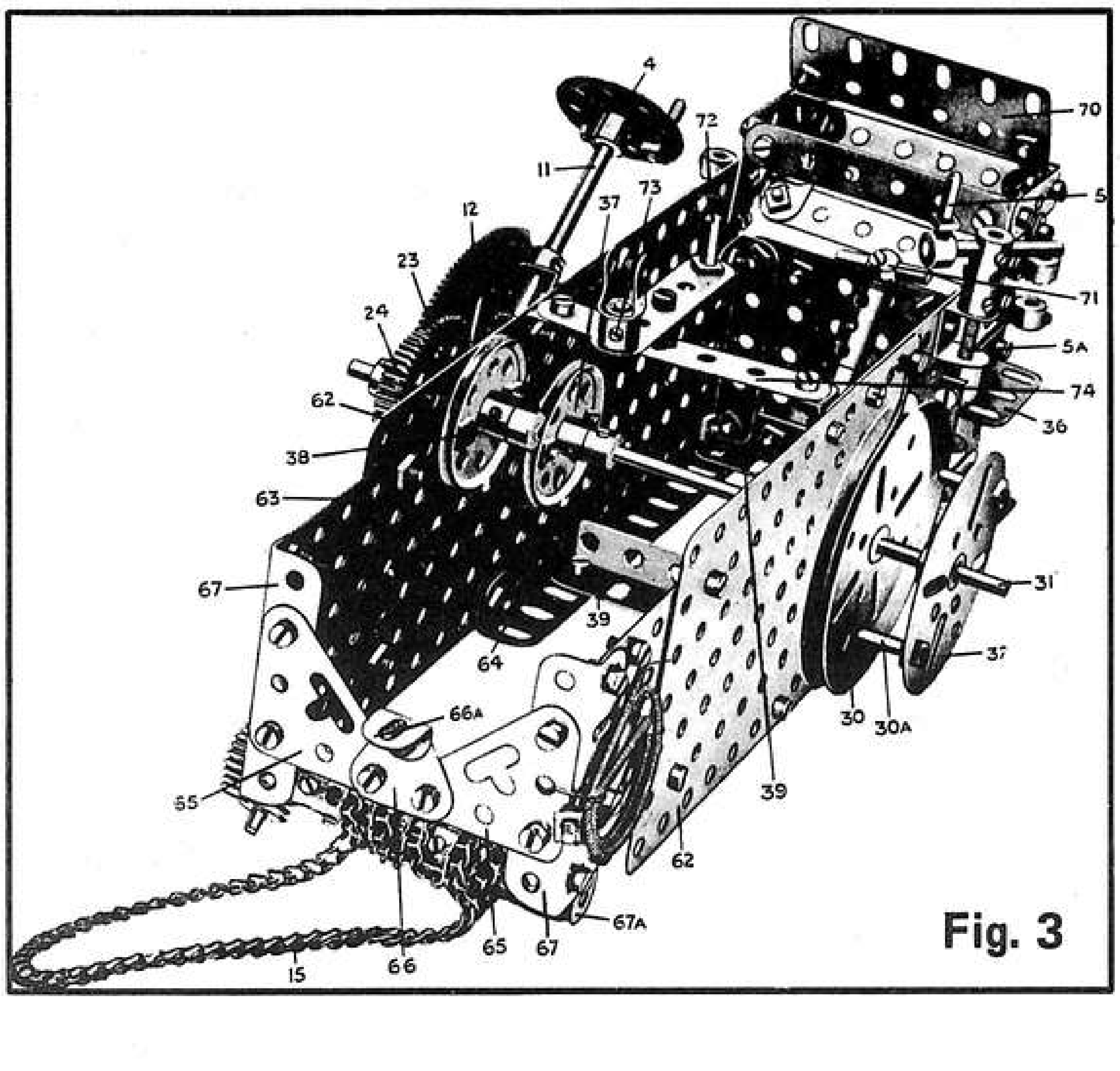


Fig. 3

Fig. 1, opposite page, a general view of the circa 1930 S.M.L. No.22 Meccano Traction Engine. Fig. 3, left, the main frame, showing control handles and rear axle complete with reinforced bearings (37). All illustrations in this feature are direct reproductions from the original Super Model Leaflet.

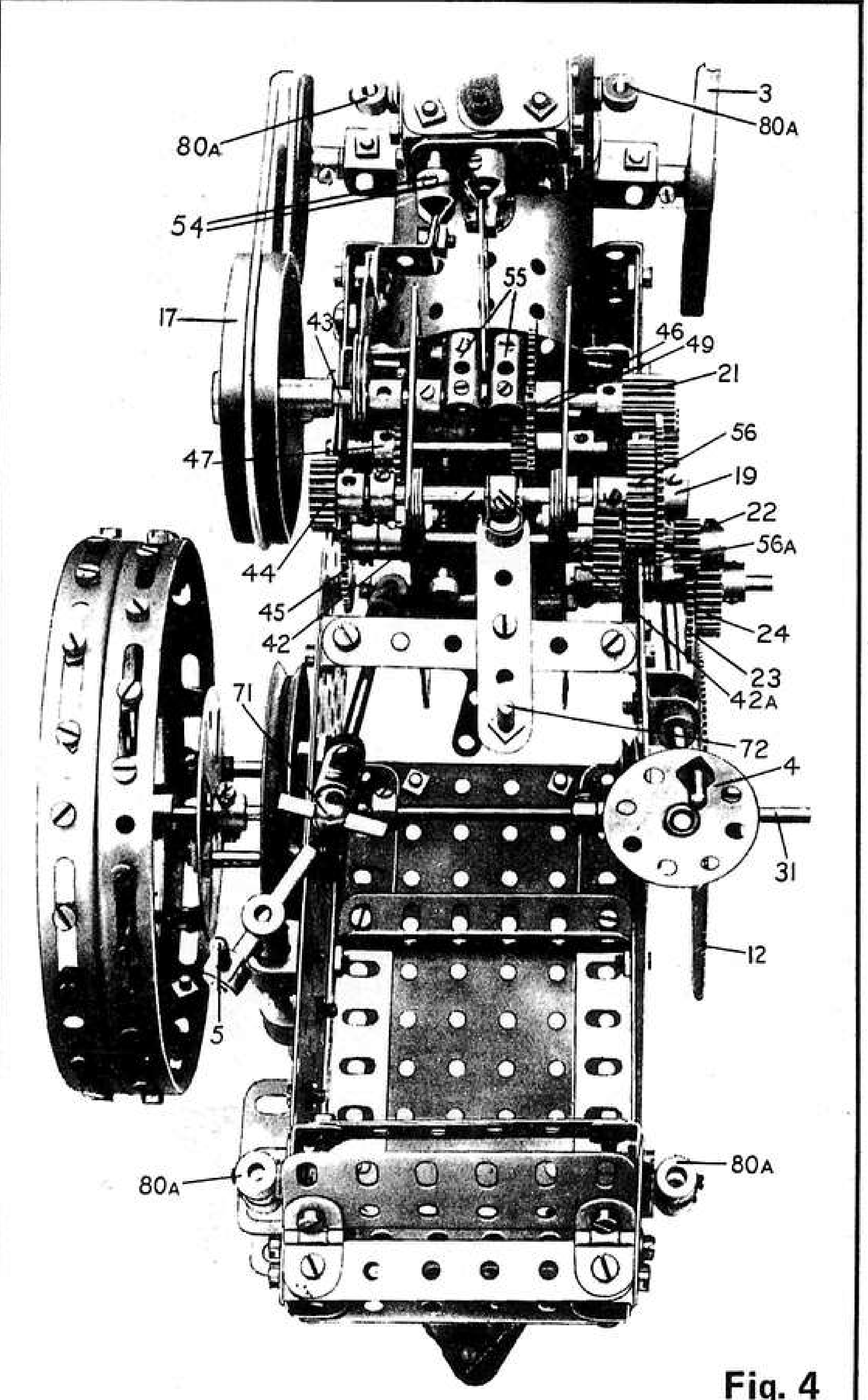


Fig. 4

Fig.4, left, a plan view of the Traction Engine, showing crankshaft and gearing, etc. The sliding Rod (42) and gear-changing lever (72) are clearly shown.

to a ½" Reversed Angle Bracket which, in turn, is lock-nutted to a Single-throw Eccentric 52 on the end of the crankshaft. A 'safety valve' composed of two Couplings carried on 1½" Rods may now be mounted on the cylinder block as shown.

The chimney 16 is composed of three Sleeve Pieces placed end to end, with the centre Sleeve Piece overlapping each of the other two by ⅜". A 3½" Rod passed lengthwise through the centre of the chimney carries at one end a ¾" Flanged Wheel, forming the chimney top. The Rod also carries two Collars, to which the top and bottom Sleeve Pieces are secured by bolts screwed through the Sleeves and into the transverse bores of the Collars.

The dynamo, mounted on two 2" Strips secured to two Angle Brackets 50, consists of two Bush Wheels each carrying seven Angle Brackets to which 1½" Strips are secured. A 2½" Rod passed through the two Bush Wheels carries two ¾" Flanged Wheels 6, one wheel being placed on either side of the dynamo. A ½" loose Pulley is also placed on one end of the Rod and is spaced from the ¾" Flanged Wheel by a Collar, while a further Collar secured to the Rod on the outer side of the ½" Pulley holds the latter in position ready to receive the belt drive from the Flywheel. The dynamo lifting hook is formed by a handrail support fitted to one of the 1½" Strips forming it's frame.

When this stage of construction has been reached, the Motor unit can be secured to the rear portion of the model by bolts passed through Angle Girders 57 of the Motor unit and into the end holes of frame Plates 62, as shown at 'D' in fig.1. The lower surface of the Boiler is bolted to Angle Bracket 66a and the two units are thus held securely in position.

MAIN GEAR TRAIN

The armature spindle 48a of the Motor carries a ½" Pinion 48 that engages with a 57-teeth Gear Wheel 47 on a Rod which also carries a ½" Pinion, this Pinion meshing with another 57-teeth Gear Wheel 49 on crankshaft 43. The crankshaft also carries a ½" x ½" Pinion 21 that meshes with a 57-teeth Gear Wheel 19 secured on a 3½" Rod 42, on which a 1" Gear Wheel 56 is also secured. On the other end of Rod 42 is a ¾" Pinion 44.

Rod 42 is slideable in its bearings and is controlled by a lever 72, the latter connected pivotally to a Small Fork Piece which engages a Collar 42a on Rod 42.

A 1" Gear Wheel 56a is fixed to a 4½" Rod journalled in the Motor sideplates, and a ½" Pinion 22 and a 50-teeth Gear Wheel 45 are carried on either end of the same Rod. It will thus be seen that, by moving lever 72, either of two gear trains may be brought into operation: the 1" Gear 46 may be meshed with 1" Gear 56a, or ¾" Pinion 44 meshed with 50-teeth Gear 45 (in both cases Gear 19 remains in mesh with ½" x ½" Pinion 21). Hence the Motor drive may be transmitted through two different gear ratios, resulting in a 'fast' and 'slow' speed of the engine. When it is desired to run the engine without the Tractor moving (such as when driving the dynamo) lever 72 should be placed in the central position. In this position both Gear Wheel 56 and Pinion 44 are disengaged from their respective gears and no power is transmitted to the driving wheels. The reverse movement for either speed is of course obtained by simply reversing the Motor.

It should be noted that Rod 42 and the Rod carrying the Gears 45 and 56a are mounted in reinforced bearings composed of 1½" Strips bolted to the Motor sideplates.

STEERING MECHANISM.

Front road wheels 3, supplied by Spoked Wheels, are carried on 1½" Rods 27 journalled in the holes of a 3½" x ½" Double Angle Strip secured to the inside of a channel girder formed by two 3½" Angle Girders 26, bolted together as shown. The inner ends of the Rods are journalled in Angle Brackets bolted to the Girders and are held in position by Collars secured to the Rods against the faces of the Angle Brackets. A Wheel Flange 8 is secured to Girders 26 by bolts passed through a 2" Sprocket Wheel, and a 1½" Rod secured in the latter acts as a pivot for the front axle unit. The Rod is journalled in a Double Bent Strip 8a bolted to the underside of the Boiler, in it's second hole, where it is held loosely in position by a Collar placed on the Rod inside the Boiler.

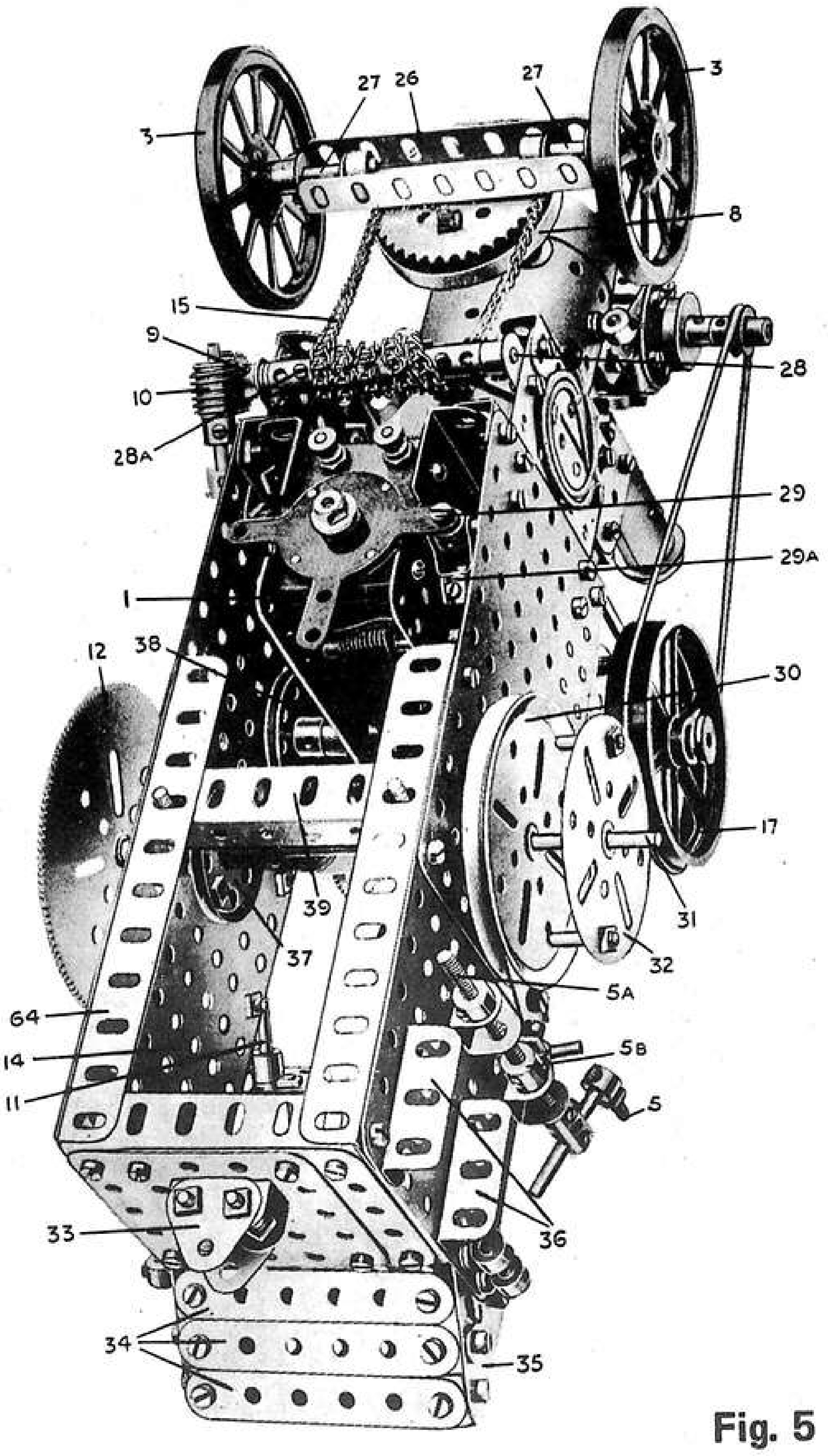


Fig. 5

Fig.5, right, an undersideview of the Traction Engine, clearly showing steering gear and Electric Motor, etc. The brake on the rear axle is also clearly visible in this view.

The steering mechanism is controlled from a Steering Wheel 4 secured on an 8" Rod 11 that is journalled in Double Brackets bolted to the side frameplate of the rear portion. The steering Rod 11 carries on its lower end a Worm 10 engaging with the ¾" Pinion 9 on a 3½" Rod 28, which is journalled in 1½" Strips bolted to the sideplates of the framework. Rod 28 carries several Coupling and Collars 28a, the heads of the Grub Screws of these serving to grip a 16" length of Sprocket Chain that is wound round the Couplings five or six turns and then passed round the 2" Sprocket Wheel attached to the front axle. The ends of the Chain are of course joined together.

DRIVING WHEELS.

Construction of the driving wheels should offer little difficulty. Two Hub Discs, bolted together and secured to a Bush Wheel (which acts as a hub), form both the right and left-hand wheels, but slightly differing methods are adopted to secure them to the axles. In the case of the right-hand wheel, two ¾" Bolts are secured by nuts to the Hub Disc. When the wheel is placed on Rod 31, it will be found that the shanks of the bolts will engage in the holes or slots of the 3½" Gear Wheel 12, this arrangement providing a more secure fixture for the road wheel than would be possible simply by tightening the Set Screw of the Bush Wheel secured to the Hub Discs.

In the case of the left-hand wheel, it is necessary to space it from the frame Plate of the rear section of the model in order to allow sufficient clearance for the Flywheel 17. For this purpose, a Faceplate 32 carrying two Threaded Pins is passed over Rod 31 and it's Set Screw is tightened so that it is secured with the Threaded Pins engaging slots or holes in the brake drum 30. The driving wheel may now be placed in position, the ¾" Bolts of the wheel engaging holes in the Faceplate.

MOTOR CONTROL

The control handle for the electric Motor is shown at 71 and by pulling or pushing this handle the Motor may be started, stopped, or reversed. The handle, which consists of a 1" Rod inserted in a Handrail Support, is attached by a Coupling to a 4½" Rod on the lower end of which is a Swivel Bearing 29a attached pivotally by a Bolt 29 to one of the Motor switch arms. A support and guide for the 4½" Rod is formed by a Collar pivotally attached by a bolt to the sideplate of the frame, the bolt being locked in position against the Collar by a nut. It is important to note that the bolt does not grip the 4½" Rod; the latter must be quite free so that the Motor switch may be moved by pushing or pulling handle 71.

The canopy may now be constructed, this being built-up from three 5½" x 3½" Flat Plates joined together, with the centre Plate overlapping the rear end Plate by three holes and the front end Plate by four holes. The sides of the canopy are extended by 7½" Strips joined to Plates 41 by Fishplates, and the portion that surrounds the chimney is formed by 2" Flat Girders secured to front Plate 41 and to a 3" Flat Girder, the latter being attached to the 7½" Strips by Fishplates. The 3½" Rods 20, forming the supports for the canopy, are secured in Couplings 20a which are, in turn, fixed by bolts to Plates 41. The lower ends of the Rods are secured in Collars 80a carried on the Boiler and bunker frame Plates.

To finally complete the model, steps 36 consisting of 1½" Angle Girders should be bolted to the Plates of the main frame. Two Double Brackets, to which are bolted two Triangular Plates, form the coupling 33 by means of which the trailer draw-bar may be attached.

PARTS REQUIRED

4- 1b
6- 4
1- 5
6- 6
13- 6a
2- 9
4- 9b
2- 9c
4- 9d
4- 9f
6-10
6-11
33-12
1-13a
1-14
1-15
9-16
1-16a
6-17
3-18a
1-18b
2-19a
1-19b
3-20b
3-21
5-24
2-25
3-26
1-26a
1-127
4-27a
1-27b
3-31
1-32
263-37
31-38
1- 45
4- 48
1- 48b
7- 52a
17- 58
28- 59
11- 63
1- 64
2- 70
4- 72
3- 77
1- 80a
18- 94
1- 95
1-103d
1-103e
2-103g
6-103h
1-109
6-111
10-111c
2-114
5-115
1-116a
4-118
1-125
1-132
4-133
2-136
1-137
1-162
3-163
1-164
1-165
2-166
1-170

1-E15R Electric Motor

MECCANO CLUB ROUNDUP

All Meccano Clubs are invited to submit reports for these pages. Reports should be approximately 350 words long, and should reach us by the end of the second month before month of publication.

CAPE TOWN MECCANO CLUB

On 20th April, the Cape Town Meccano Club held its 50th Meeting, the venue being Michael Waring's house.

Ticking away quietly in the background was Michael Adler's magnificant Grandaughter Clock, based on the model featured in the January MMQ. Brian Hodgson, showed a neat little Horizontal Steam Engine, whilst Trevor Hawtrey showed an 0-4-0 Loco and a clockwork motor-powered Horse and Chariot which walked realistically. Colin Cohen is currently working on a Jones-type Lorry-mounted Crane. He demonstrated the almost completed "lowline" chassis which is 23½" long and driven by a Power Drive Unit via a clutch, a 4-speed-and-reverse gearbox and two differentials: still to be fitted to the chassis is another 3-speed gearbox and a gear-change on the rear axles, giving 24 ratios in all.

Meccano interest is growing in Cape Town and we have three new members – Arthur Sharpe, Michael Waring and Morris Cormofsky, as well as two new country members, Ed Hodson and Jimmy Monk.

The Club is working towards a large exhibition which will be staged next year, during the Easter school holidays. It is hoped, not only to display our models to the public, but also to try and stimulate Meccano interest and thereby possibly attract new members.

Both Tatchell Venn and Richard Schonegeval, members who had to go away on transfer, have been able to come down to Cape Town for a visit; it's only a pity they could not come back on transfer!

Colin Cohen has taken over the chair from Michael Adler who, due to other committments, felt that he would like to relinquish the post. Trevor Hawtrey has taken up the post of Secretary, and his address is 19 Maddison Square, Edgemead, Cape Town 7405, South Africa.

Trevor Hawtrey.

HENLEY SOCIETY OF MECCANO ENGINEERS

HENLEY SOCIETY OF JUNIOR MECCANO ENGINEERS

The May meeting of the Henley Societies started with the Junior meeting in the afternoon. The "Meccano Engineer" award – this time for the best Meccano Bridge – was won by Ian Henwood, whose Suspension Bridge was noteworthy in being largely constructed with Axle Rods, giving a most novel appearance.

The Senior Society's evening meeting had the usual varied display of fine models. Jack Partridge has celebrated his return from meeting Dr. Cameron by recreating the Doctor's interesting "Automatic Elevator". Pushbuttons within the lift cage and at each floor brought the correct response from the cage, on a "first come first served" basis.

Bill Roberts has now completed his Paling-Fence Assembly Machine. Fully automated, it is one of the most noteworthy models to appear for some time, especially when one takes into account the fact that Bill had no access to any prototype information, but has tackled the problem entirely from scratch with no inspiration to guide him other than a pile of "lolly sticks"! The sticks represent the prototype palings, and are positioned, one by one, bound with wire and delivered as an almost never-ending length of completed fence.

Michael Edwards showed his veteran "K"-type Double-Deck Bus once more: this model earned the Society an invitation to mount a Meccano display at the London Transport open day at Syon Park Museum. This duly took place on the following weekend. During the Exhibition, a reconnoitering party investigated the possibilities of a visit to the Kew Bridge Beam Engines, which date back to 1820, and following this, further visits were planned to places of model-building interest.

The Syon Park exhibition was but one of the outside visits that members have made in recent months, groups having visited Midlands Meccano Guild and Holy Trinity Club meetings, the North West Meccano Guild Exhibition at Clitheroe and the Tramway Museum at Crich. Geoff Wright even dared to "manipulate" the recent meeting date to enable him to sample the delights of the Glasgow underground railway, which still operates with the original 1896 rolling stock!

Members are looking forward to their next meeting in early October, after, of course, the big event of the year – the Henley Meccano Exhibition, in September.

Geoff Wright

HOLY TRINITY MECCANO CLUB

The sixteenth meeting of the H.T.M.C. was held in the Hildenborough Parish Church Hall on Saturday, 1st May.

Tony Homden, our President, welcomed all present and started the proceedings by showing Aeroplane models from pre-war Sets and an "AA" Gun from the Mechanised Army Set.

Phil Bradley celebrated 50 years of Meccano modelling with a fine Crane based on a Stothert & Pitt crane illustrated in a 1926 M.M. It was a beautiful model incorporating all the complications of the original prototype.

Noel Ta'Bois brought along two Grandfather Clocks, whilst Ian Hemsworth from Henley brought his giant Coles Crane (less its 16' jib) and David Whitmore his Maudsley Table Engine. Bill Roberts demonstrated his completely automated Fence-making Machine, Frank Palin a reproduction of the prize-winning Locomotive of "Master Keith Cameron" circa 1925 and Michael Martin an up-dated version of the S.M.34 Three Engined Argosy Airliner.

A welcome visitor from the Midlands Meccano Guild, Ernest Chandler, showed his Seat Belt Machine which is a valuable aid to road safety and which has already been demonstrated widely.

A Blaw Knox Bulldozer was shown by Phil Bratley, a Steam Digger by Jim Dowswell and Bert Halliday demonstrated a 4-6-2 Express Tank Loco beautifully finished in black and red. Eric Dyball showed a Vertical Lift Bridge built from pre-war parts and featuring an original 6V Motor.

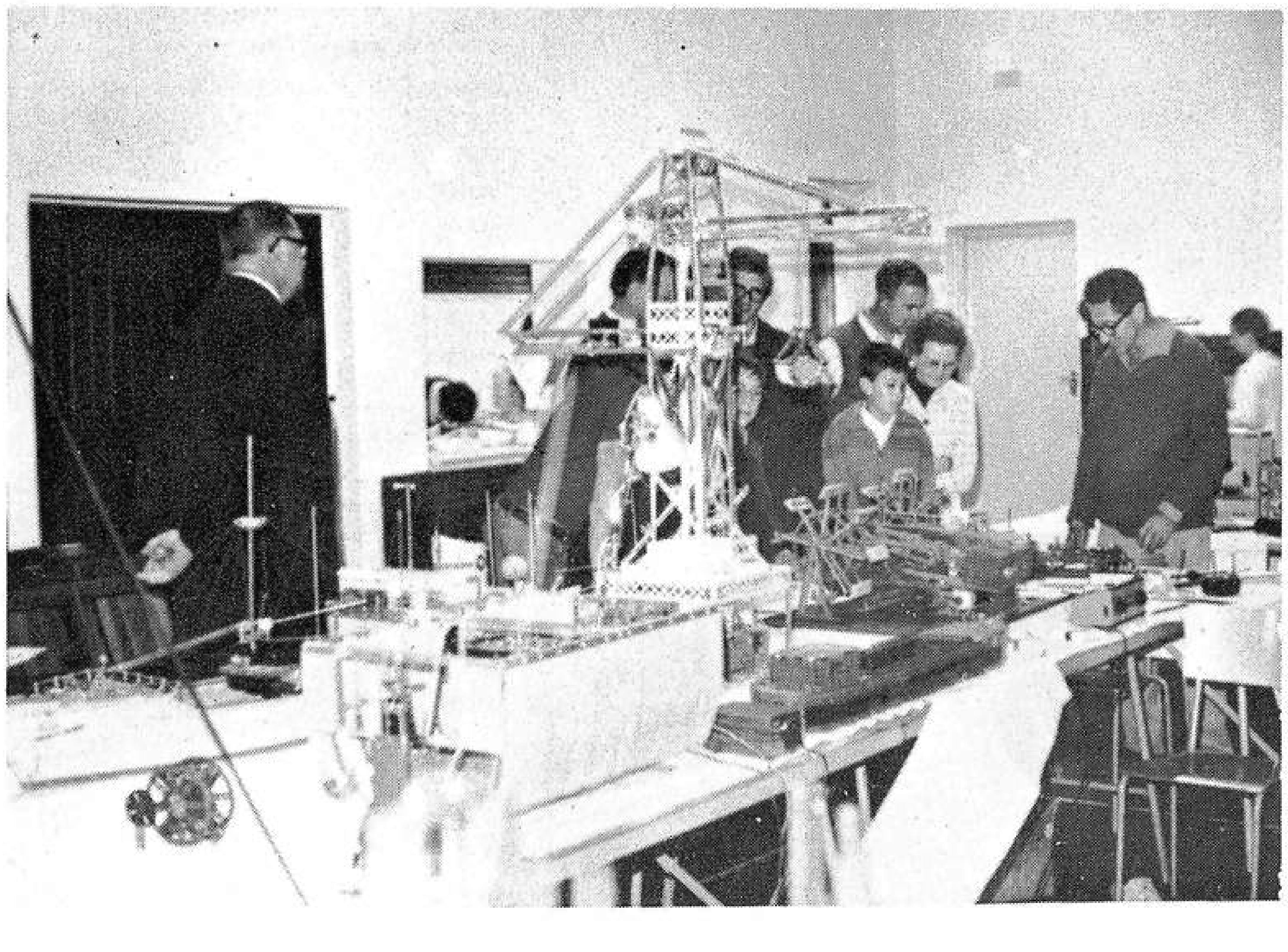
Public vehicles were represented by Adrian Ashford's Greenline Coach and Mike Edward's L.T. Double Decker K-type Omnibus. Remotely controlled and complete with working horn, bell, lights power steering and power gear-change, his model took the prize, literally: Tony Homden presented Mike with the Stuart Wilson Cup for his efforts!

After another look round the models and a chat, the packing-up was completed by 6.30 p.m.

We next meet at the Henley Exhibition on 3rd & 4th September, and the next meeting at Hildenborough will be on Saturday, 13th November.

Frank Palin.

Below, a few of the models on show at the Johannesburg Meccano Hobbyists exhibition at the D.R. Church Hall, South Hills, Johannesburg.



IRISH MECCANO CLUB

The Spring meeting of the Irish Meccano Club was held on 15th May, at the Lake County Hotel, Mullingar, Eire. The attendance was only three members, two of the regulars being unable to attend. This was slightly compensated for, however, by the presence of our new member, David Murphy.

The regulars, Ron Wayte and Terry McCabe, had no new models, although Ron had finished sorting out the "bugs" in his Road Locomotive. I, myself, took along some obsolete items which I had picked up at the disposal of an extensive collection.

The focus of attention – which would be a "show-stopper" at any exhibition – was David Murphy's 1905 Rolls Royce. With an overall length of 24", a wealth of detail was evident and all the movements of the original were faithfully reproduced. David hopes to go to Henley, this year, and we are encouraging him to take his model along with him.

Promises of attendance at the Autumn meeting were given by our absent friends and we are looking forward to having a minimum of five present.

Regrettably, my notes are short owing to the small attendance and lack of models, but we are hoping to get one or two new recruits for the next meeting.

Terry McCabe.

JOHANNESBURG MECCANO HOBBYISTS

On Saturday, 20th March, the J.M.H. staged their very first Meccano Exhibition. It was held at the D.R. Church Hall, South Hills, Johannesburg, in aid of church funds, and although it was a rainy day, the show was extremely well attended.

There were some 30 models on show at the Exhibition. Dave Feinstein displayed a Harbour Container Crane and a large motorised Road Roller complete with power-a compact Tellurion. Demonstrations of out-of-the-ordinary gear drives were shown by Michael Martin, while both he and Jim Gamble had self-contained exhibitions of interesting examples of historical Meccano parts.

The A.G.M. was addressed by the President who thanked the Officers for their hard work, Bert Love in particular for keeping the membership informed and also for his valuable contributions to the MMQ and the Meccano Engineer. David Whitmore was elected as Chairman, Paul Brecknell as Vice Chairman and the annual subscription was pegged at the previous rate.

Following the A.G.M. the membership had a further opportunity to see more models being demonstrated, the meeting finally coming to an end with everyone in agreement that it was an outstanding success.

Bert Love.

Above, Stevenage Meccano Club's very first "lady" member, 10 year-old Tamsyn Reseigh.

STEVENAGE MECCANO CLUB

With this report we present a photograph of our first female member, 10 year old Tamsyn Reseigh. Tamsyn thoroughly enjoys her Meccano modelling, and the boys have made her very welcome indeed.

Bob Faulkner's "No. 1 Set Competition" was won by Clive Alston who entered a model of a Totter's Horse and Cart. Clive's prize was 50p, whilst runners-up Paul Wallace and Keith Assender won 25p each with a model of a Helicopter and a Jet Aircraft respectively.

A £1 donation from Roger Le Rolland, will be the prize for the member who designs and builds the best club mascot. Roger, by the way, has been made an Honorary Life Member of the SMC in appreciation of all he has done for the club and the hobby as a whole.

Roger represented the SMC at the North West Meccano Guild exhibition at Clitheroe on 3rd April, displaying his vintage Rolls Royce, Spitfire, Road Locomotive, Cugnot Steam Carriage, and a Wedding Cake. Not surprisingly, the last model aroused a fair bit of curiosity.

At the time of writing, Peter Brown had just finished building a Dalek, scheduled for it's first public appearance at the North Avenue Church, Letchworth, on 22nd May. Michael Edwards of Watford also planned to be there with his now-famous model Bus, and Brian Edwards of Bedford expected to be able to attend also. Brian took his Road Roller to the Midlands Meccano Guild meeting in April.

One of our new adult members, Terry Pope, has a thriving club going in Wellingborough, under the name of the Wellingborough and District Meccano Club. The membership is entirely junior at present, apart from Terry, and therefore anyone wishing to join the club or to help Terry with the organisation of club activities should write to him at 16 Princess Way, Wellingborough, Northants.

NEW MEMBERS

Adults:	Jim Gamble (Nottingham)
Boys:	Russel Howard (Hitchin) Graham Francis (Stevenage) David Edwards (Bedford)
Girl:	Tamsyn Reseigh. (Stevenage)

Bernard Dunkley

SOLENT MECCANO CLUB

Owing to the fact that the Solent Meccano Club has only just been formed, there is very little to report this issue.

At the present moment, members are busy constructing models and the subjects discussed at meetings are mostly pertaining to the future.

The Club's very first exhibition will be at the 'Netley Marsh Steam and Vintage Rally' near Southampton on 24th and 25th July, and it is hoped that Cranes, Traction Engines, a Fire Engine and Meccanographs, etc, will be on display.

New members would be most welcome, and anybody interested in joining the Solent Meccano Club should contact the Secretary, Tony Rednall, at 4 Mount Pleasant, Mead End Road, Denmead, Hampshire.

Tony Rednall.

SOUTHERN CALIFORNIA MECCANO CLUB

Our Club's Spring Meeting was held at the residence of Ed Marzola on Saturday, 27th March. We welcomed, as new members, Mr. Clyde M. Easterley of Van Nuys, Mr. Lucien J. Roux of Carson and Mr. A. G. Settle of Los Angeles.

Jack Taylor demonstrated his entry for the Anaheim Convention Show – A "Covey Island Parachute Drop". He is still working on it, and improving it all the time! Other members have their entries in various stages of construction for this exhibition.

Our current library exhibition at the West Chapman Branch of the Orange County Library is on its sixth week, and has been considered their most successful display for over a year. Models were provided by Jack Taylor, John Edwards and Clyde Suttle. The display items have been changed from time to time, which has undoubtedly helped maintain interest.

Our Club seems to be generating interest in the Meccano hobby, as many enquiries have been received by the Secretary.

Clyde T. Suttle

(Any reader interested in joining the Southern California Meccano Club should contact the Secretary, Clyde Suttle, at 6062 Cerulean Avenue, Garden Grove, California 92645, U. S. A.)

TRANSVAAL MECCANO GUILD

Twenty-one members were present at the 21st Meeting of the Guild, our first since Christmas. We would like to assure readers of our Guild reports that, although we do not submit a report for every issue, we are still very much alive and building!

Building we most certainly are! Pierre Marais showed the chassis of a Breakdown Crane which was most skilfully constructed entirely from zinc parts, whilst Jaap Kies showed a 6 ft. long Mallett Locomotive chassis in black and silver. Joe Crettaz presented and operated his Travelling Tower Crane which performed all the necessary operations easily, with power supplied by a Meccano Steam Engine.

My thanks to all members who brought models along to the meeting; they were all splendid but, alas, space preculudes my mentioning each and every one of them in this report. Members were shown photographs taken by Alan Partridge of his Saltash Bridge, and a very advanced design in Orreries.

All the models at the meeting were photographed by Abie Koegelenberg and Rudy Gevers. We will, in future, make a point of doing this at every meeting, so that we may keep a record.

Peter Matthews.

WELLINGBOROUGH & DISTRICT MECCANO CLUB

Since exhibiting my 'Evening Star' Locomotive in a Wellingborough store last December, I have formed a Meccano Club. Although small, all our members are extremely keen and each takes a model along to our monthly meetings which run for approximately two hours.

On 22nd May, members of the Club travelled to Letchworth to attend an exhibition organised by the Stevenage Meccano Club and the Hornby Railway Society. Paul Dickin exhibited an Army Field Gun, Matthew Traxton a selection of Pit Mining Gear, Adrian Davies a Boy's Trolley, Steven Burgess a Jeep and Michael Burgess a circa 1933 Aeroplane Constructor Kit No.2. I, myself, took along my 'Evening Star' Loco (now reduced to main frame, driving wheels, cylinders and motions in working order) and two incomplete models in the shape of a Double Decker Bus and a 1/24th scale Beyer Garratt Locomotive.

We all wish to thank Dennis Higginson and Neil Alston for their valuable and much appreciated assistance.

Terry Pope.

(If interested in joining the Wellingborough & District Meccano Club, please contact the Secretary, Terry Pope, at 16 Princess Way, Wellingborough, Northants.)

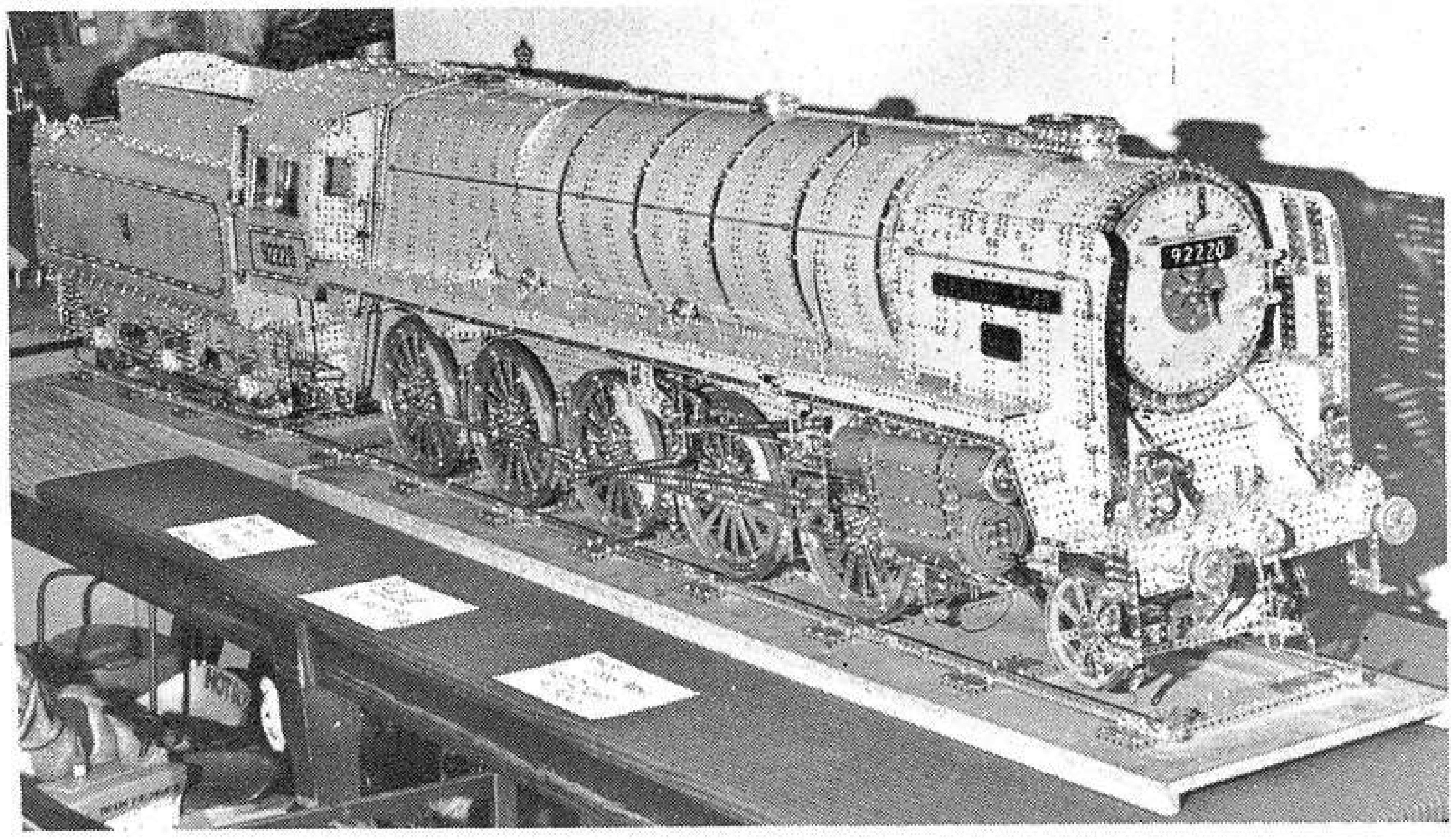
POSSIBLE NEW CLUBS?

Meccano enthusiasts in Bristol and also the Goa area of India will undoubtedly be pleased to learn that a fellow enthusiast in each of these areas would like to meet people with a view to forming a Meccano Club. The gentlemen to contact, if interested, are as follows:–

Bristol: Ian Sellick, 88 Kings Drive, Bishopstown, Bristol.

India: Trevor Mazarelo, Spring Avenue, House No. 579, Velim, Goa, India.

Below, Terry Pope's incredible 'Evening Star' Locomotive which was part of the Wellingborough & District Meccano Club's display at an exhibition organised jointly by the Stevenage Meccano Club and the Hornby Railway Society.



steering. He also showed a fine example of Bert Love's Grandfather Clock.

Dennis Else showed an Articulated Lorry built from a No. 9 Set, a Mantel Clock driven by a No. 1 Clockwork Motor and a compact Fairground Octopus. A Tracked Excavator on show was kindly lent to us by Nugget Agencies of Rosetterville, Johannesburg.

Charles Roth, Secretary of the J.M.H., had a fine selection of models on show, the centrepiece of his "mini-display" being a superb model of the Laxey Water Wheel, complete with flashing lights. He also showed a Fork Lift Truck built on 6" ashtray tyres, a 7' long Cargo Boat, a Coal Barge, an automated Ship's Coaler, a Meccanograph and a model of a ship's Stabilising Giroscope.

The Exhibition closed at 8.30 p.m. and a good time was had by all.

The Club continues to hold monthly meetings, each one at a different member's house. As we are only five members, we would be pleased if interested modellers would telephone the Secretary at 43–7400 with a view to joining our Club.

Charles Roth.

MIDLANDS MECCANO GUILD

The 18th Meeting of the Midlands Meccano Guild was held on Saturday, 20th April, at the Greig Memorial Hall, Alcester. The Hall was opened at 9.30 a.m. and, at 2.30 p.m., the Chairman called the meeting to order.

The meeting commenced with model demonstrations by members. Martin Brown showed the large chassis of an American Concrete Mixer, Ernest Chandler a model of the R.O.S.P.A. Safety Belt Sleigh, Ian Henwood an 18' high Lorry-mounted Tower Crane and Mike Catterills a realistic model of the Skegness Lifeboat, complete with Tractor & Trailer.

A Fruit Machine, Spirograph and a Gramaphone were shown by John Lavers, whilst Dennis Perkins showed a remote-controlled Vintage Car and Terry Pettitt a Morgan Three wheeler sporting "working" valve gear.

Clive Hine demonstrated his Sky Diver fairground model, now complete with a Scammel Shotrac and two Trailers, and Frank Palin showed an electrically-driven Traction Engine and a 4-2-2 Loco and Tender, both models being built from instructions featured in pre-war M.Ms.

A varied collection of models were brought along by both Esmond Roden and Eric Baldwin; a Steam Tram with Coal Truck, two Vintage Tramcars, a Bren Gun Carrier, a Lorry and two Multikit models were shown by Esmond, whilst Eric showed an Agricultural Engine, a synchronous, Electric Clock and an excellent Meccanograph.

To complete the line-up, Roger Wallis showed a well-finished Single Deck Bus and Eddie Brooker a superb Differential Analyser.

Following model demonstrations, the Hon. Secretary explained the arrangements for the Guild's stand at the Stonleigh Town and Country Festival to be held on August Bank Holiday weekend.

It was agreed that the Guild's Autumn Meeting should be held on 25th September, subject to the Hall being available on that date.

Finally, three new members were welcomed to the Guild and the meeting came to a close at 7.30 p.m.

Ernest Chadler.

NORTH EASTERN MECCANO SOCIETY

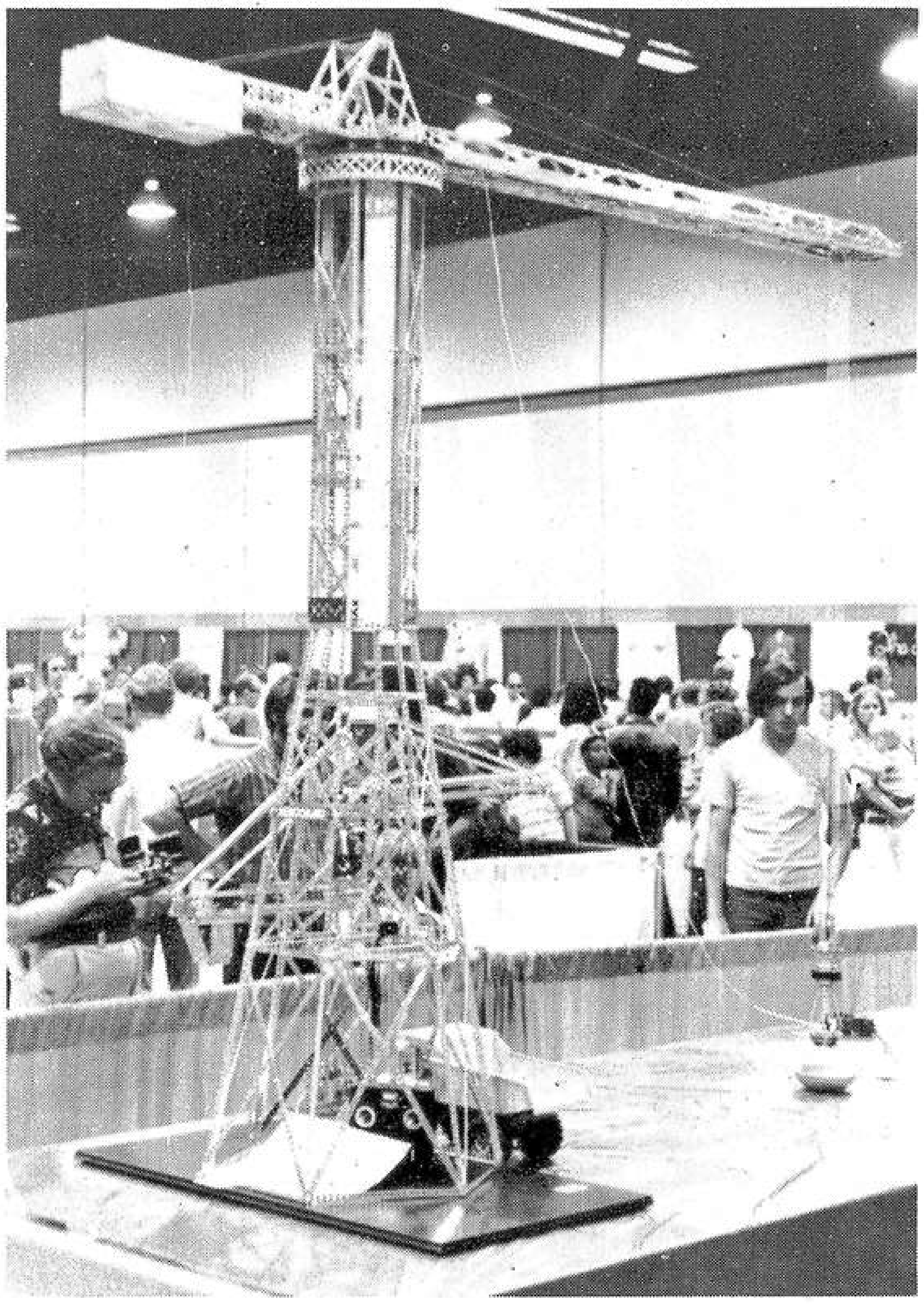
The month of March provided plenty of activity for the N.E.M.S. with many members striving to complete models for events in April, which also proved to be a busy month.

Five of our members visited the North West Meccano Guild Annual Exhibition held at Clitheroe in April, and all agreed that the journey over the Pennines was well worthwhile. They had a most interesting and enjoyable day, and met many well known – and not so well known – Meccanomen.

On 21st April, four members of the Society spent the day at Tyne Tees television studios in Newcastle, where an interesting time was had in filming an 8 minute appearance on the news programme, "Today at Six". The programme was broadcast all over the North East that evening; in fact, we left the studios just in time to arrive at our homes and see the T.V. programme ourselves! Frank Beadle and Chris Barron were involved in the actual interview, with Peter Holland of Tyne Tees television and Joe and Sally Etheridge doing yeoman work staging the model for the interview.

Our models were eventually set in motion to some rather 'mechanical' and appropriate background music. Models on show included a Dockside Crane, a Horizontal Engine, a Steam Roller, an Excavator, a Road Loco and Train, a Container Loader Crane, a Beam Engine, a Giant Blocksetter and a Walking Horse and Cart. The latter two were the work of John Mallon. The interview took most of the day, but helped to put the Society on the map, as it were. Fame at last!

Right, although not mentioned in their report, the Southern California Meccano Club exhibited a number of models at the Hobby and Craft Show held in the Anaheim Convention Center (opposite Disneyland) on 1st and 2nd May. Pictured here is Jack Taylor's 10' high remote-controlled Tower Crane.



Following our T.V. debut, we mounted a large display in the window of a garage owned by a Meccano enthusiast in Chester-Le-Street, Co. Durnam. This display had a suitable placard which read "As recently seen on Tyne Tees Television" and was on view for two weeks.

At the April general meeting, Mike Allen was welcomed as a new member, with the actual business of the meeting being concerned with the Society's hectic past activities and forthcoming events. It was agreed all round that we desparately need to expand our membership and funds, in order to allow the Society to embark upon larger Winter activities, especially our proposed exhibition in late Autumn.

Any Meccano enthusiasts in the North East who would be interested in joining the N.E.M.S., should contact the Secretary, Frank Beadle, at "Greytyles". Yoredale Avenue, Darlington, DL3 9AN.

Frank Beadle.

PENNINE MECCANO GUILD

The 4th meeting of the P.M.G. was held in Huddersfield at the Church School, Linthwaite, on 8th May. Once again, there was a full turn-out of members to enjoy the summer sunshine and the magnificent display of Meccano models. The meeting quickly went "open air", the adjacent school playground providing an ideal site for the all-important Meccano photography.

New members Geoff, Julian and Francine Cole were quickly made welcome, particularly when it became apparent that they had brought along a mini-exhibition of their own! A Showman's Road Locomotive, Vintage Car, 'Royal Tiger' Tank and a miniature Dockside Crane constituted the Cole's collection.

Another family "firm" is Mike and Stephen Pashley, Mike showing a beautiful Poclain Hydraulic Shovel whilst his son, Stephen, showed an excellent No.9 Set Fork Lift Truck.

Norman Mason also brought along a Fork Lift Truck, whilst fellow Lancastrain, Bill Barker, showed a Helicopter which featured variable pitch blades and a hinged fuselage section. Martyn Brown's model was a Heavy-duty Cement Lorry, and brother Graham's, a Futuristic Car inspired by the film 'Death Race 2000'. Graham also showed a unique Wind-powered Generator which successfully operated a Meccano motor. Completing the Lancas line-up was Mike Walker's American Saloon Car an n Hornsby's Bulldozer, modified for pipe-laying du

The first-ever P.M.G. clock ticked steadily throughout the meeting – an MMQ design built by David Fairbanks. Another magazine model was a fine Mississippi Riverboat by John Russell of Wakerfield.

John Bader of Bradford demonstrated a powerful Foden Eight-wheel Tipping Truck, powered by a mains motor through a six-speed gearbox. On a much smaller scale, a modest Multikit Truck represented the entry of my son, Jonathan, into the world of Meccano modelling.

Refreshments were again in the capable hands of Edna Chapman, and, at 6.00 p.m., the meeting finally ended. All agreed that it was by far the most successful meeting to date!

Future Guild events include a display at Yeadon Town Hall on 18th September and the P.M.G.'s first annual exhibition, now scheduled for 21st May, 1977, at Huddersfield.

Bill Charleson.

SOCIETY OF ADVANCED MECCANO CONSTRUCTORS

The Annual General Meeting of the S.A.M.C. took place on Saturday, 27th March at the Spring get-together in Hall Green and was attended by a majority of our U.K. membership. Overseas greetings were received from our fraternal members from five continents and were read out at the initial assembly.

To begin the model demonstrations, Pat Briggs, well known as a leading Meccano clock designer, showed the other facet of his work in the shape of two highly-accurate Planetary Gearboxes and a Tellurion. David Whitmore showed a fine model of a 19th Century Side-lever Paddle Engine, whilst Roger Wallis showed a superb Midland Red type S15 Single Decker Bus which was extremely well proportioned. Internal equipment such as seating, cab fittings and controls were fitted, and special attention had been given to the model's transmission, suspension, differential and brakes. Bert Shaw demonstrated a superb replica of 'Hercules', the World's largest floating crane at 26,000 tons displacement.

Many smaller, but quite elegant models were supplied by Leslie and Barry Clay, John Palmer showed a selection of models ranging from Gantry Cranes to Trucks and our Loco expert, Ralph Clark, showed his 1/16th scale 4-2-2 Express Locomotive of 1870 vintage.

Chris beckett and his father showed two supermodels in the shape of a Giant Ship's Coaler and a modern Fairground Ride, whilst the Hon. Secretary demonstrated

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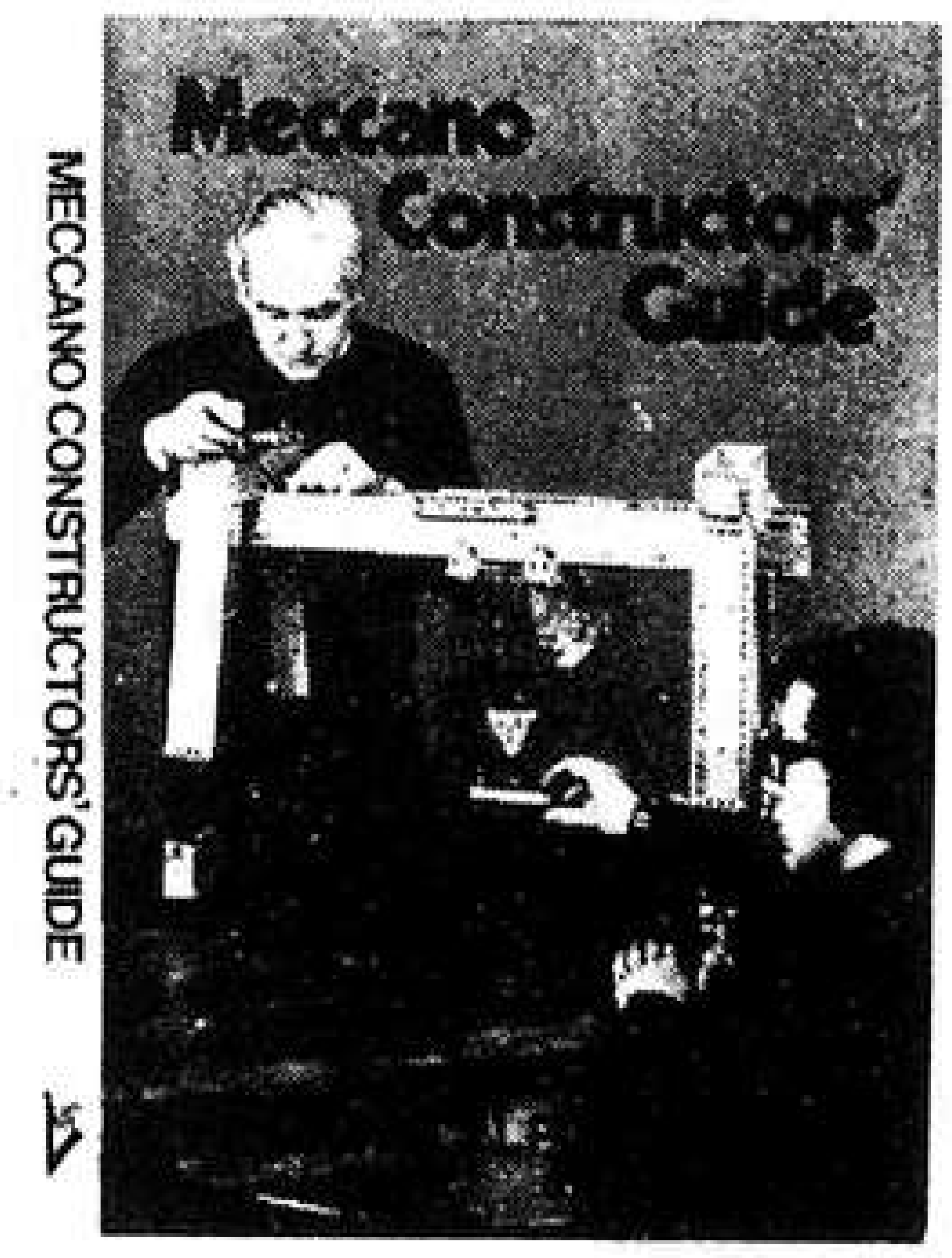

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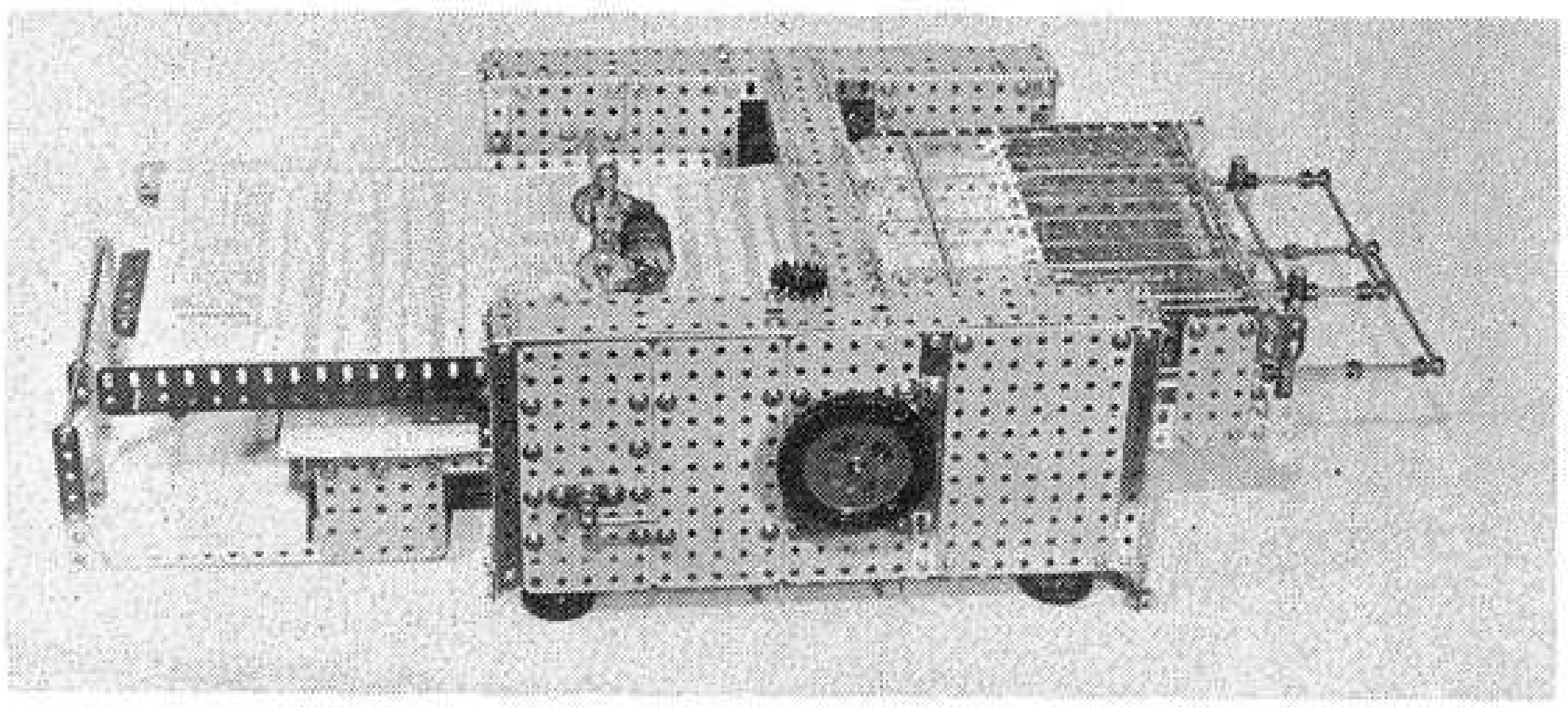

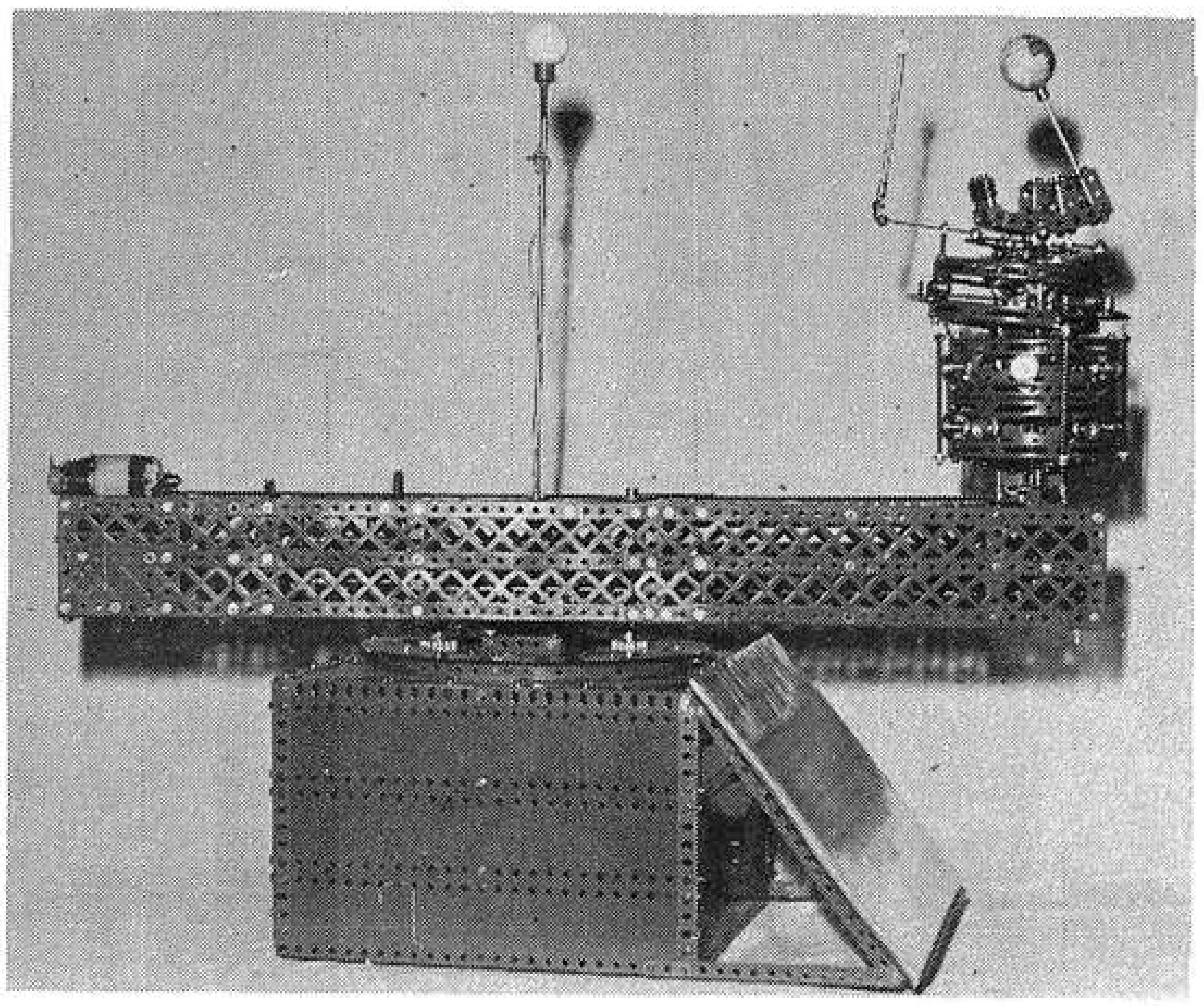

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IMPORTANT FOR READERS IN THE MIDLANDS! The Midlands Meccano Guild will again be mounting a comprehensive Meccano display at this year's Town & Country Festival to be held at the Royal Showground, Stoneleigh, Warwickshire, over the August Bank Holiday weekend (28th-30th August). I strongly recommend a visit to the Show as, from past experience, I can assure you of an extremely enjoyable time.
– *The Ed.*

PUZZLE IT OUT

Answer to the teazer on Page 65 of this issue. The six moves are: 12 to 3; 7 to 4; 10 to 6; 8 to 1; 9 to 5; 11 to 2.

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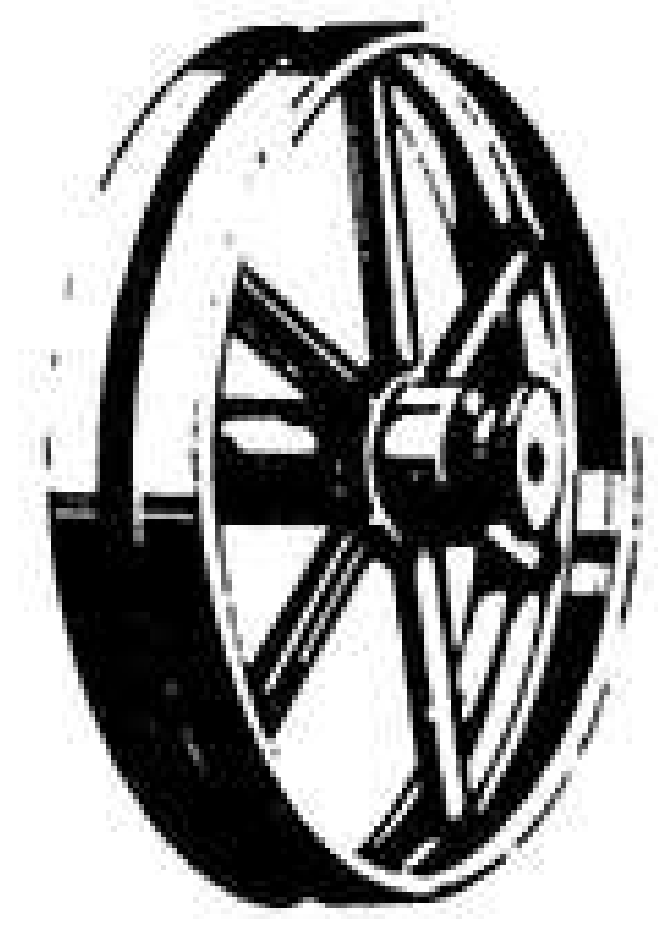

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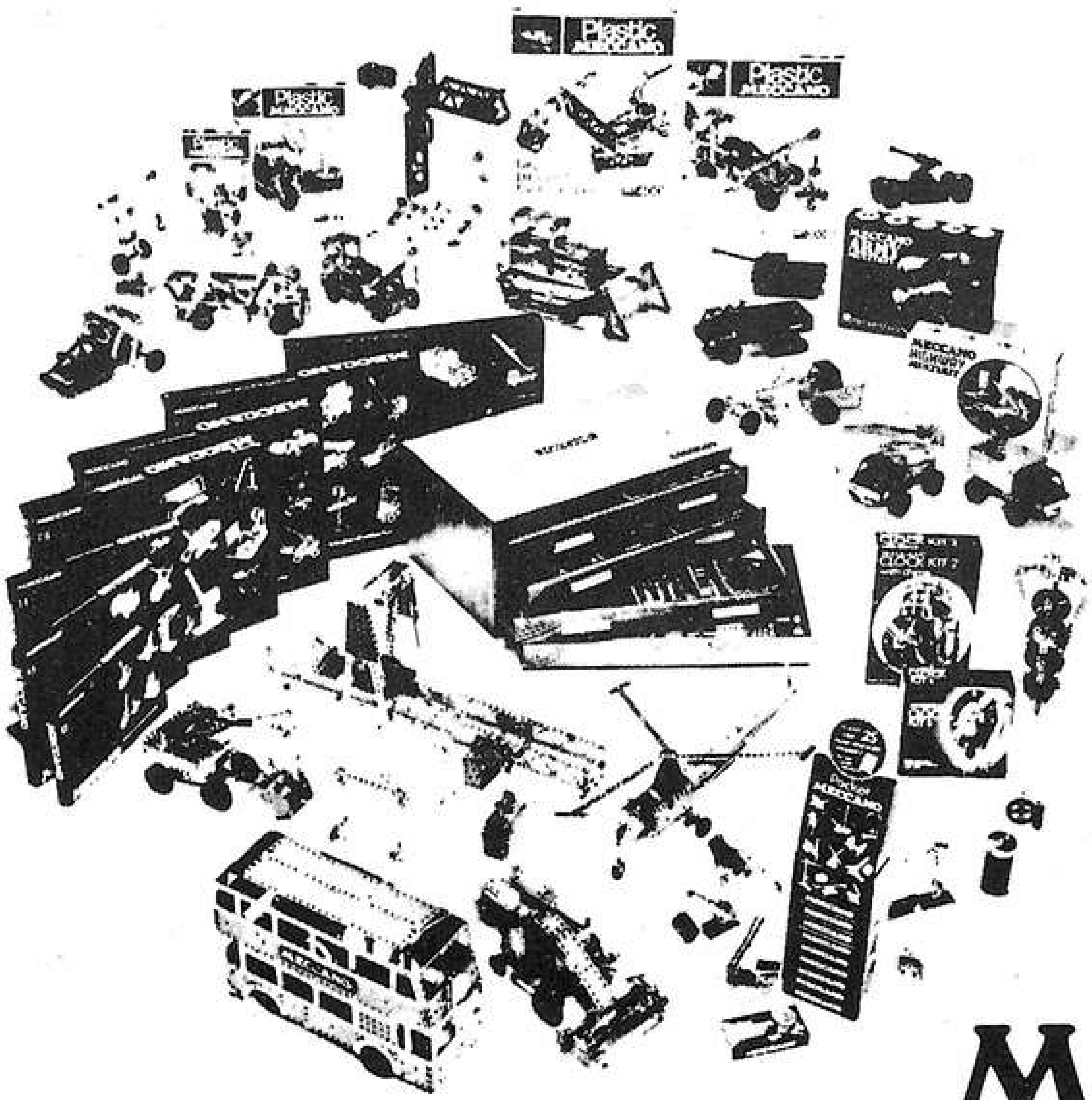

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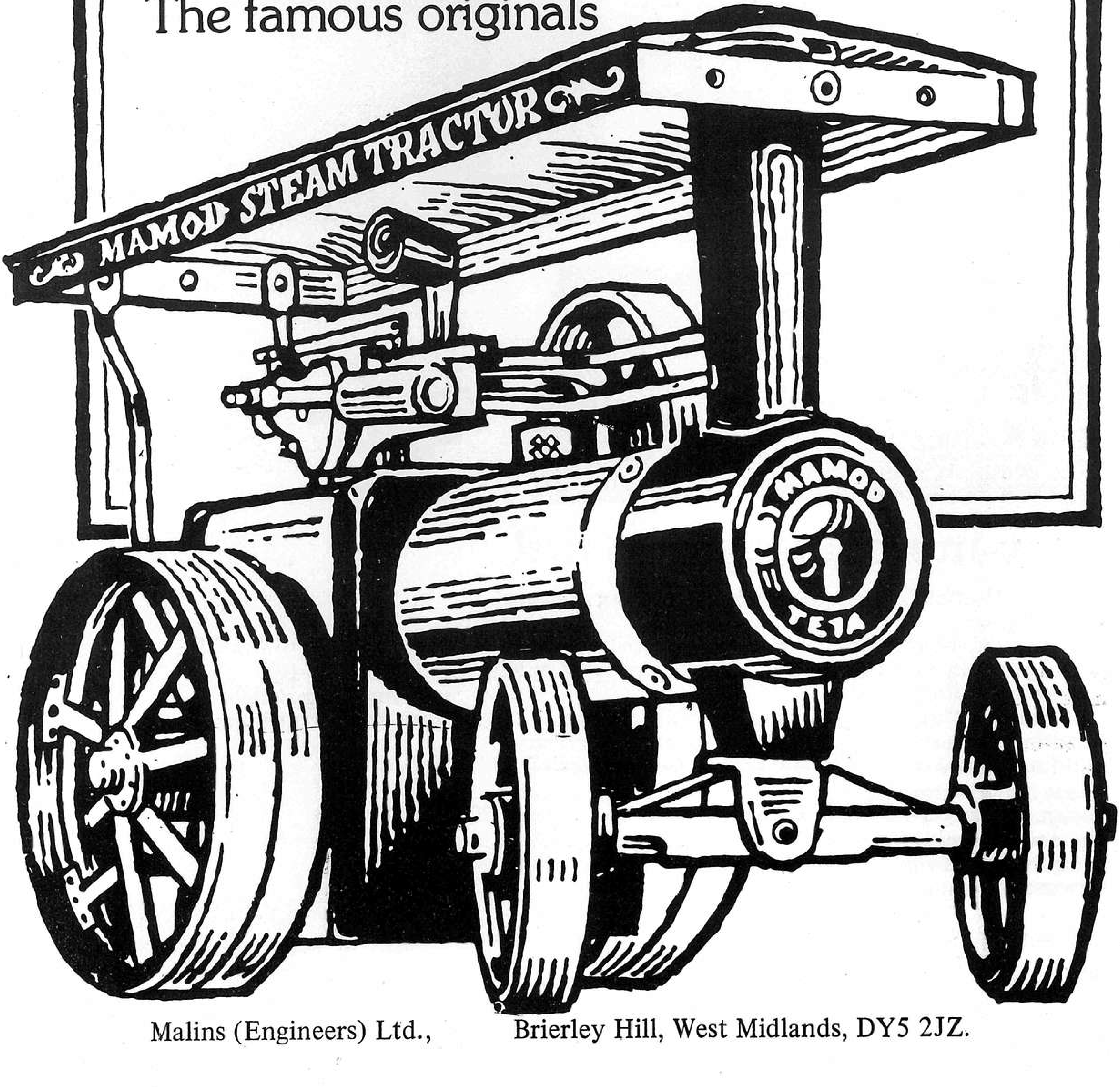

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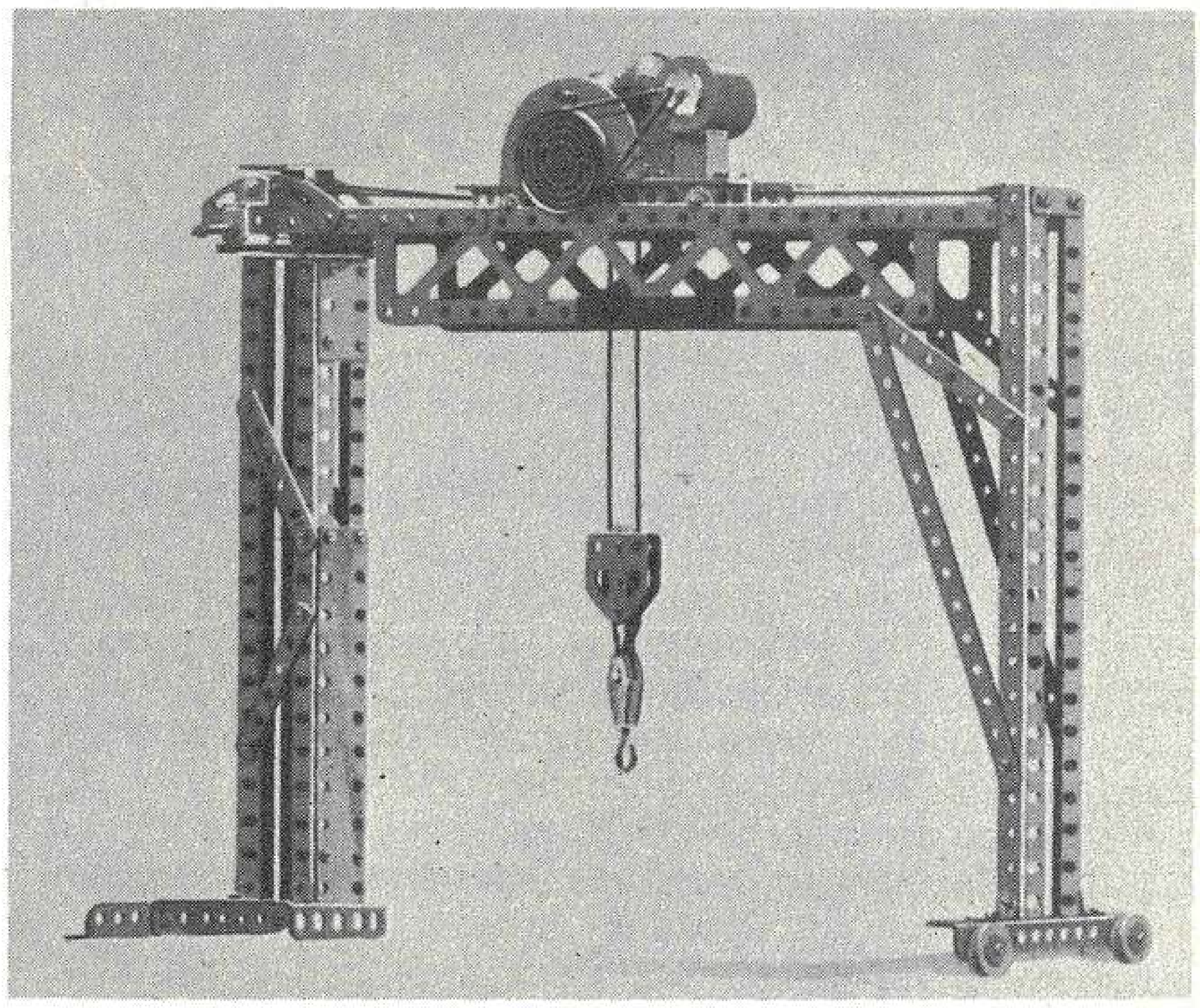

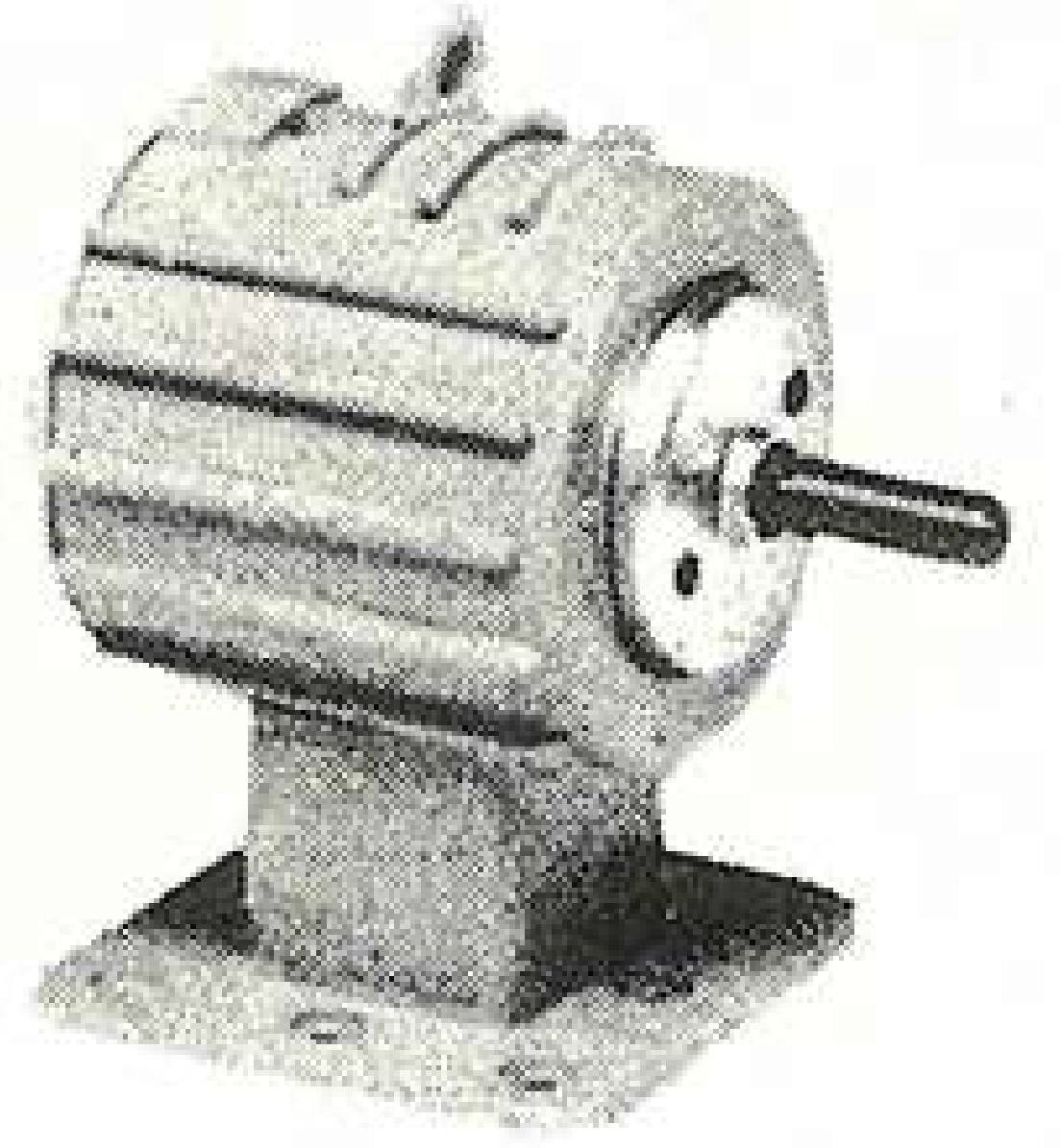

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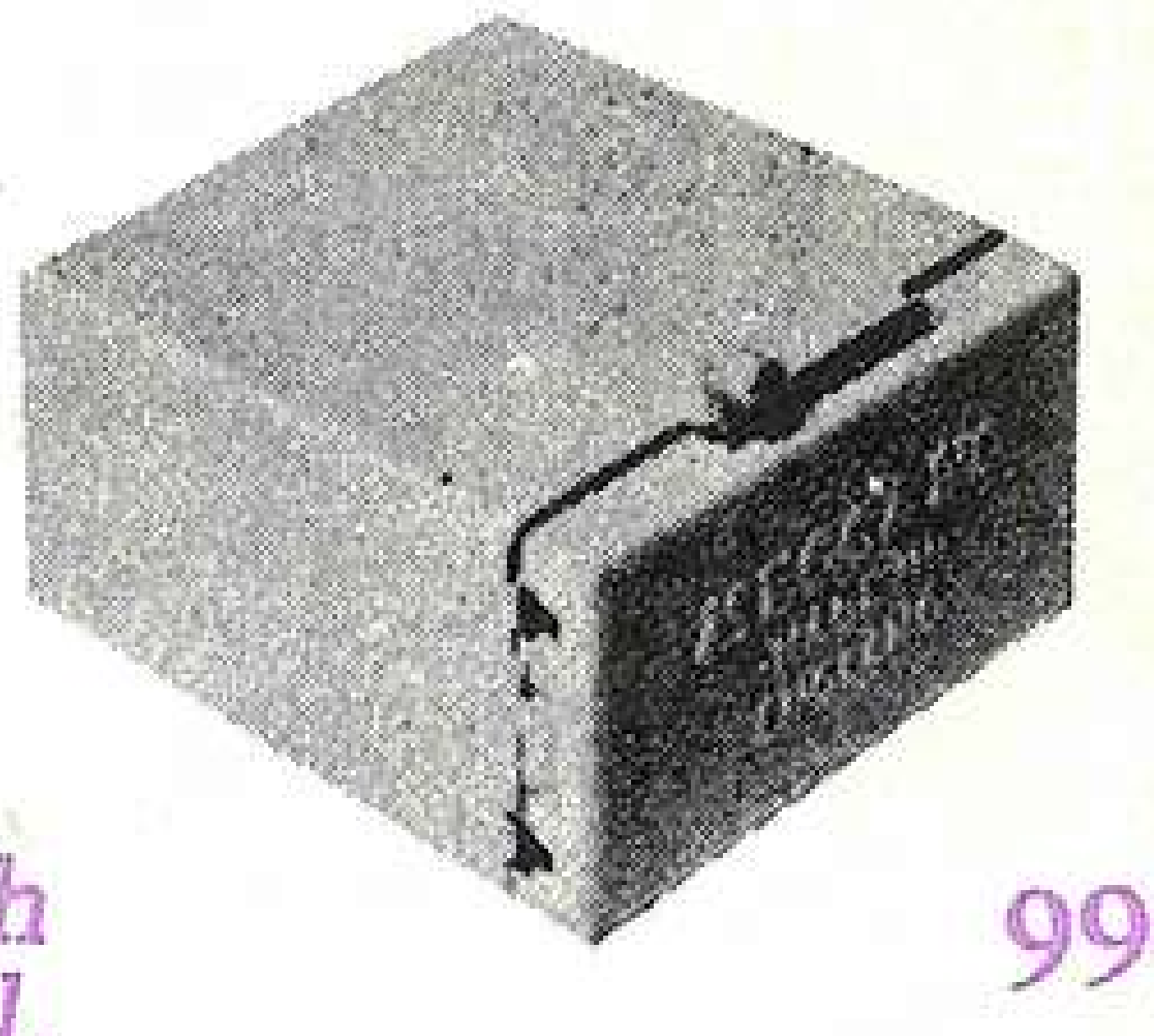

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